FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CROTON WATER TREATMENT PLANT AT THE EASTVIEW SITE

5.10. NOISE ANALYSIS

5.10.1. Introduction

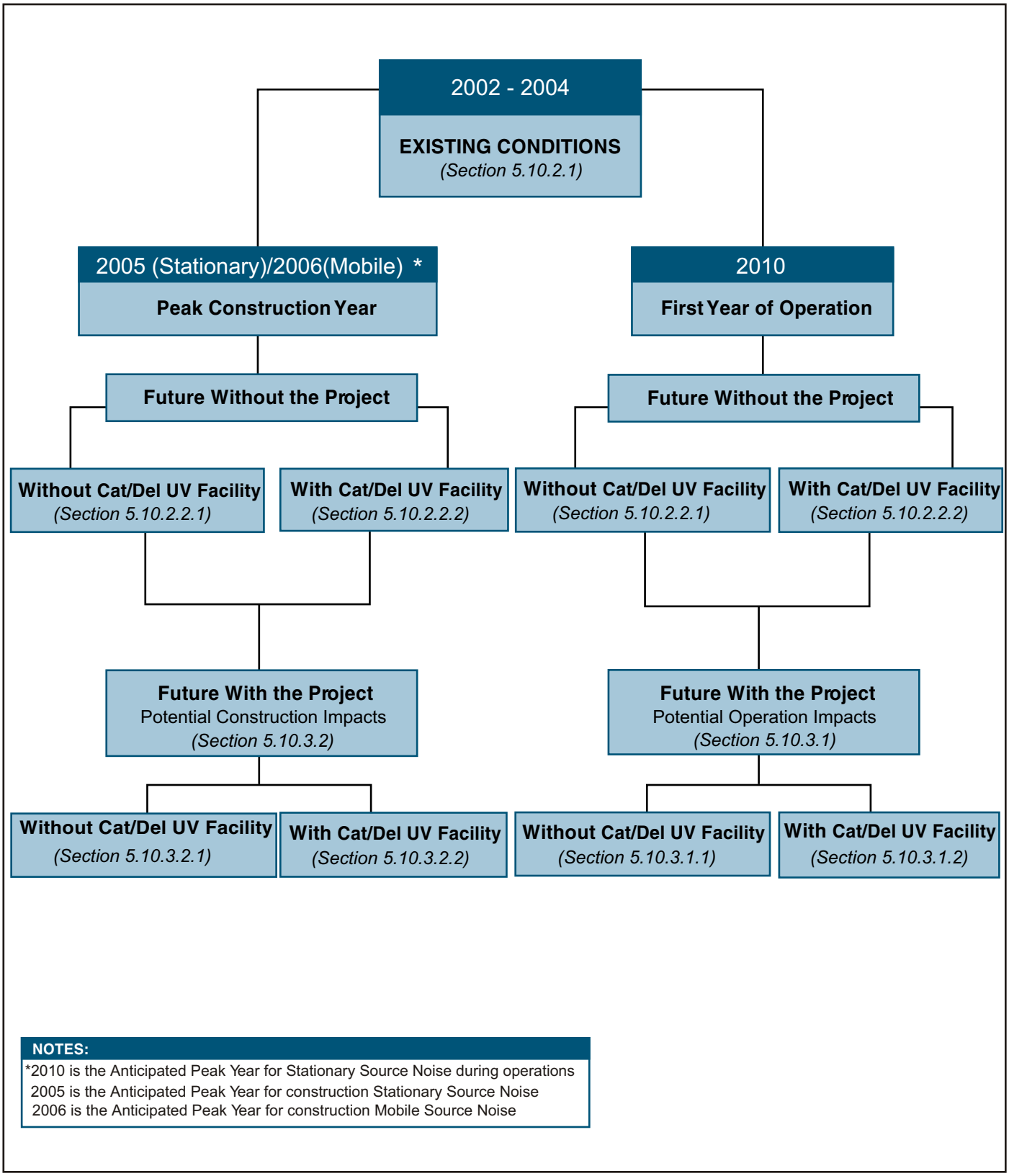
This noise analysis is divided into two types: mobile source and stationary source. Mobile source noise is analyzed because of the potential for noise generated from vehicles traveling on roadways near sensitive land uses. Included in this type of noise is construction traffic. Stationary source noise describes the sound level emanating from a property. Both mobile and stationary source noise were analyzed using the descriptor L_{eq}. L_{eq} is the continuous equivalent sound level, defined as the single sound pressure level that, if constant over the stated measurement period, would contain the same sound energy as the actual monitored sound that is fluctuating in level over the measurement period. The methodology used to prepare this analysis is presented in Section 4.10, Data Collection and Impact Methodologies, Noise. A chart showing the analysis framework for this section and where information for the various analysis conditions can be found is shown in Flowchart 5.10-1.

5.10.1.1. Preliminary Noise Screening for Mobile Source Noise Analysis

As outlined in the methodologies section, and as the initial step in the mobile source noise analysis, a preliminary noise screening using passenger car equivalent (PCE) values was performed to determine whether receptors located near the identified noise-sensitive route segments would experience an increase in noise levels of 3 dBA or more as a result of the additional vehicular traffic generated by the project. Existing and future anticipated traffic data for the noise-sensitive route segments in the vicinity of the proposed Croton project site were analyzed to determine a PCE value for each segment for the morning peak hour, the afternoon peak hour, and the lowest traffic-volume off-peak (i.e. quietest) hour for the existing condition. The preliminary noise screening was performed by comparing the existing PCEs with existing PCEs plus the addition of the future project-generated PCEs. The equation shown below was used for this comparison. Future PCEs would be from additional traffic resulting from the proposed project.

$$\text{If } \frac{\text{Existing PCEs + Future Project-Generated PCEs}}{\text{Existing PCEs}} > 2.0 \text{ then an impact may occur.}$$

This comparative analysis of existing PCEs and future PCEs was used to determine whether the receptors near the identified noise-sensitive route segments would potentially experience a doubling or more of PCEs. Three decibels (dBA) is the threshold used for screening purposes since it correlates to an increase that is perceptible to human auditory sensitivity. This threshold is used as a guideline to determine whether anticipated project impacts warrant further field measurements and subsequent Traffic Noise Model (TNM) analysis. A doubling of PCEs corresponds to a noise increase of three dBA. The *CEQR Technical Manual* has established a project-induced noise level increase threshold of 3-5 dBA at receptors. Route segments that did not experience a doubling of PCEs due to project-induced traffic, therefore, would not exceed this impact threshold.



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Noise Framework of Analysis

Croton Water Treatment Plant

Flowchart 5.10-1

The two time periods representing the largest increase in future PCEs resulting from the proposed operations and construction activities were used for the comparative analysis. The anticipated PCEs from normal operations for the Future With the Project year (2010) were used for the operations analysis. The anticipated construction-related peak truck traffic year (2006) was selected for the construction analysis. Two scenarios were assessed for each analysis year: one in which the proposed NYCDEP Catskill/Delaware Ultraviolet Light Disinfection Facility (Cat/Del UV Facility) is not analyzed on the Eastview Site; and another in which the Cat/Del UV Facility is included in the site analysis. The Cat/Del UV Facility would be located in the southeastern area of the Mount Pleasant parcel.

Tables 5.10-1 and 5.10-2, respectively, present the comparison of future PCEs from the proposed project to existing PCEs along route segments for project operations and construction for the scenario described above that does not include predicted contributions from the Cat/Del UV Facility.

Tables 5.10-3 through 5.10-7 present the comparison of future PCEs from the proposed project to existing PCEs along route segments for project operations and construction for the scenario described above that does include predicted contributions from the Cat/Del UV Facility. Table 5.10-3 shows the PCEs comparison for operations. For the Cat/Del UV Facility, the greatest incremental change from construction mobile sources is predicted to occur in 2008. Although this year differs from the anticipated peak mobile source construction year for the Croton project (2006), the two years were combined in the following tables in order to predict the worst-case scenario. Tables 5.10-4 through 5.10-7, respectively, present the PCEs comparison along route segments for construction with the four different construction worker parking options. These are the four options devised to ensure adequate parking for construction workers at the two concurrent projects at the Eastview Site. The options are as follows:

Option A: All of the construction workers for the proposed Croton project and the Cat/Del UV Facility would park at the Landmark at Eastview office park, west of the project site, and would be shuttled to the construction site in buses or vans.

Option B: All of the construction workers for the proposed Croton project and the Cat/Del UV Facility would park at the Westchester Community College (WCC) Campus, east of the project site, and would be shuttled to the construction site in buses or vans.

Option C: Parking for all the construction workers for the proposed Croton project and the Cat/Del UV Facility would be split evenly between the Landmark at Eastview and WCC, and would be shuttled to the construction site in buses or vans.

Option D: Construction workers for the proposed Croton project would park at the Landmark at Eastview, and construction workers for the Cat/Del UV Facility would park at the Home Depot, and both would be shuttled to the construction site in buses or vans.

Following the preliminary noise screening using the comparative PCE analysis for the operations and construction years for each of the various scenarios and options presented above, it was determined that the route segments with sensitive receptors would not experience a doubling of PCEs and therefore would not experience a 3 dBA increase in noise level.

TABLE 5.10-1: COMPARISON OF EXISTING PCES TO FUTURE PCES FROM OPERATIONS IN VICINITY OF EASTVIEW SITE (2010)

Route Segment		Period of Analysis (Weekday)	Existing PCEs	Time	New Passenger Car	New Trucks	New PCEs	PCE Ratio	Incremental Change in dbA	Further Analysis Required?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	12743	08:00 - 09:00	10	1	57	1.00	0.02	no
		PM Peak	5428	17:00 - 18:00	10	1	57	1.01	0.05	no
		Quietest Period	3106	07:00 - 08:00	0	1	47	1.02	0.07	no
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	14355	08:00 - 09:00	10	1	57	1.00	0.02	no
		PM Peak	8209	17:00 - 18:00	10	1	57	1.01	0.03	no
		Quietest Period	7385	07:00 - 08:00	0	1	47	1.01	0.03	no
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	6792	08:00 - 09:00	0	0	0	1.00	0.00	no
		PM Peak	5495	17:00 - 18:00	0	0	0	1.00	0.00	no
		Quietest Period	1703	07:00 - 08:00	0	0	0	1.00	0.00	no
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	2593	08:00 - 09:00	0	1	47	1.02	0.08	no
		PM Peak	1914	17:00 - 18:00	0	1	47	1.02	0.11	no
		Quietest Period	1202	07:00 - 08:00	0	1	47	1.04	0.17	no
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	2594	08:00 - 09:00	0	1	47	1.02	0.08	no
		PM Peak	1932	17:00 - 18:00	0	1	47	1.02	0.10	no
		Quietest Period	1206	07:00 - 08:00	0	1	47	1.04	0.17	no
6	Bradhurst btw Grasslands and Lakeview	AM Peak	3258	08:00 - 09:00	0	0	0	1.00	0.00	no
		PM Peak	1968	17:00 - 18:00	0	0	0	1.00	0.00	no
		Quietest Period	1397	07:00 - 08:00	0	0	0	1.00	0.00	no
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	7021	08:00 - 09:00	2	0	2	1.00	0.00	no
		PM Peak	5488	17:00 - 18:00	2	0	2	1.00	0.00	no
		Quietest Period	2566	07:00 - 08:00	0	0	0	1.00	0.00	no
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	6937	08:00 - 09:00	36	1	83	1.01	0.05	no
		PM Peak	5441	17:00 - 18:00	36	1	83	1.02	0.07	no
		Quietest Period	3296	07:00 - 08:00	0	1	47	1.01	0.06	no
9	Grasslands Rd. btw Saw Mill River Rd. and Walker Road	AM Peak	6937	08:00 - 09:00	14	1	61	1.01	0.04	no
		PM Peak	5441	17:00 - 18:00	14	1	61	1.01	0.05	no
		Quietest Period	3296	07:00 - 08:00	0	1	47	1.01	0.06	no
10	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	14603	08:00 - 09:00	4	1	51	1.00	0.02	no
		PM Peak	9445	17:00 - 18:00	4	1	51	1.01	0.02	no
		Quietest Period	8761	07:00 - 08:00	0	1	47	1.01	0.02	no
11	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	12836	08:00 - 09:00	4	1	51	1.00	0.02	no
		PM Peak	9401	17:00 - 18:00	4	1	51	1.01	0.02	no
		Quietest Period	7358	07:00 - 08:00	0	1	47	1.01	0.03	no
12	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	5455	08:00 - 09:00	26	1	73	1.01	0.06	no
		PM Peak	5886	17:00 - 18:00	26	1	73	1.01	0.05	no
		Quietest Period	461	07:00 - 08:00	0	1	47	1.10	0.42	no

Notes:

New PCEs = (no. of cars + no. of trucks(47))

PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs

Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

TABLE 5.10-2. COMPARISON OF EXISTING PCES TO ANTICIPATED FUTURE WITH THE PROJECT PCES DURING CONSTRUCTION (2006) WITHOUT UV FACILITY

	Route Segment	Period of Analysis (Weekday)	Existing PCEs	Time	New Passenger Car	New Trucks	New PCEs	PCE Ratio	Incremental Change in dbA	Further Analysis Performed?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	4428	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	5863	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	2155	06:00 - 07:00	0	0	0	1.00	0.00	No
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	6541	6:30-7:30	59	27	1328	1.20	0.80	No
		PM Peak	6061	3:30-4:30	59	27	1328	1.22	0.86	No
		Quietest Baseline	5189	06:00 - 07:00	59	0	59	1.01	0.05	No
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	2392	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	2622	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1300	06:00 - 07:00	0	0	0	1.00	0.00	No
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	1022	6:30-7:30	0	9	423	1.41	1.50	No
		PM Peak	1155	3:30-4:30	0	9	423	1.37	1.36	No
		Quietest Baseline	898	06:00 - 07:00	0	0	0	1.00	0.00	No
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	1249	6:30-7:30	0	9	423	1.34	1.27	No
		PM Peak	896	3:30-4:30	0	9	423	1.47	1.68	No
		Quietest Baseline	946	06:00 - 07:00	0	0	0	1.00	0.00	No
6	Bradhurst btw Grasslands and Lakeview	AM Peak	1197	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	1171	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1059	06:00 - 07:00	0	0	0	1.00	0.00	No
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	2904	6:30-7:30	0	9	423	1.15	0.59	No
		PM Peak	2451	3:30-4:30	0	9	423	1.17	0.69	No
		Quietest Baseline	1949	06:00 - 07:00	0	0	0	1.00	0.00	No
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	2399	6:30-7:30	225	9	648	1.27	1.04	No
		PM Peak	2422	3:30-4:30	225	9	648	1.27	1.03	No
		Quietest Baseline	2539	06:00 - 07:00	225	0	225	1.09	0.37	No
9	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	7473	6:30-7:30	20	9	443	1.06	0.25	No
		PM Peak	6075	3:30-4:30	20	9	443	1.07	0.31	No
		Quietest Baseline	7135	06:00 - 07:00	20	0	20	1.00	0.01	No
10	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	8852	6:30-7:30	20	9	443	1.05	0.21	No
		PM Peak	5702	3:30-4:30	20	9	443	1.08	0.32	No
		Quietest Baseline	5931	06:00 - 07:00	20	0	20	1.00	0.01	No
11	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	536	6:30-7:30	20	9	443	1.83	2.62	No
		PM Peak	558	3:30-4:30	20	9	443	1.79	2.54	No
		Quietest Baseline	330	06:00 - 07:00	20	0	20	1.06	0.26	No

Notes:

New PCEs = (no. of cars + no. of trucks(47))

PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs

Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

TABLE 5.10-3. COMPARISON OF EXISTING PCES TO ANTICIPATED FUTURE WITH THE PROJECT PCES DURING OPERATIONS (2010) WITH UV FACILITY

Route Segment		Period of Analysis (Weekday)	Existing PCEs (with UV)	Time	New Passenger Car (Croton)	New Trucks (Croton)	New PCEs (Croton)	PCE Ratio	Incremental Change in dbA	Further Analysis Required?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	12747	08:00 - 09:00	10	1	57	1.00	0.02	no
		PM Peak	5428	17:00 - 18:00	10	1	57	1.01	0.05	no
		Quietest Period	3106	07:00 - 08:00	0	1	47	1.02	0.07	no
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	14355	08:00 - 09:00	10	1	57	1.00	0.02	no
		PM Peak	8209	17:00 - 18:00	10	1	57	1.01	0.03	no
		Quietest Period	7385	07:00 - 08:00	0	1	47	1.01	0.03	no
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	6792	08:00 - 09:00	0	0	0	1.00	0.00	no
		PM Peak	5495	17:00 - 18:00	0	0	0	1.00	0.00	no
		Quietest Period	1703	07:00 - 08:00	0	0	0	1.00	0.00	no
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	2641	08:00 - 09:00	0	1	47	1.02	0.08	no
		PM Peak	1914	17:00 - 18:00	0	1	47	1.02	0.11	no
		Quietest Period	1202	07:00 - 08:00	0	1	47	1.04	0.17	no
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	26641	08:00 - 09:00	0	1	47	1.00	0.01	no
		PM Peak	1932	17:00 - 18:00	0	1	47	1.02	0.10	no
		Quietest Period	1206	07:00 - 08:00	0	1	47	1.04	0.17	no
6	Bradhurst btw Grasslands and Lakeview	AM Peak	3258	08:00 - 09:00	0	0	0	1.00	0.00	no
		PM Peak	1968	17:00 - 18:00	0	0	0	1.00	0.00	no
		Quietest Period	1397	07:00 - 08:00	0	0	0	1.00	0.00	no
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	7069	08:00 - 09:00	2	0	2	1.00	0.00	no
		PM Peak	5488	17:00 - 18:00	2	0	2	1.00	0.00	no
		Quietest Period	2566	07:00 - 08:00	0	0	0	1.00	0.00	no
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	6954	08:00 - 09:00	36	1	83	1.01	0.05	no
		PM Peak	5441	17:00 - 18:00	36	1	83	1.02	0.07	no
		Quietest Period	3296	07:00 - 08:00	0	1	47	1.01	0.06	no
9	Grasslands Rd. btw Saw Mill River Rd. and Walker Road	AM Peak	6937	08:00 - 09:00	14	1	61	1.01	0.04	no
		PM Peak	5441	17:00 - 18:00	14	1	61	1.01	0.05	no
		Quietest Period	3296	07:00 - 08:00	0	1	47	1.01	0.06	no
10	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	14652	08:00 - 09:00	4	1	51	1.00	0.02	no
		PM Peak	9445	17:00 - 18:00	4	1	51	1.01	0.02	no
		Quietest Period	8761	07:00 - 08:00	0	1	47	1.01	0.02	no
11	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	12932	08:00 - 09:00	4	1	51	1.00	0.02	no
		PM Peak	9401	17:00 - 18:00	4	1	51	1.01	0.02	no
		Quietest Period	7358	07:00 - 08:00	0	1	47	1.01	0.03	no
12	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	5455	08:00 - 09:00	26	1	73	1.01	0.06	no
		PM Peak	5886	17:00 - 18:00	26	1	73	1.01	0.05	no
		Quietest Period	461	07:00 - 08:00	0	1	47	1.10	0.42	no

Notes:
Existing PCES: existing + PCEs from UV facility operation.
New PCEs = (no. of cars + no. of trucks(47))
PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs
Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

TABLE 5.10-4. COMPARISON OF EXISTING PCES TO ANTICIPATED FUTURE WITH THE PROJECT PCES DURING CONSTRUCTION (2006) WITIH UV FACILITY (CONSTRUCTION WORKER PARKING OPTION A).

	Route Segment	Period of Analysis (Weekday)	Existing PCEs (with UV Option A)	Time	New Passenger Car (Croton)	New Trucks (Croton)	New PCEs (Croton)	PCE Ratio	Incremental Change in dbA	Further Analysis Performed?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	4907	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	6349	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	2155	06:00 - 07:00	0	0	0	1.00	0.00	No
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	6572	6:30-7:30	59	27	1328	1.20	0.80	No
		PM Peak	6063	3:30-4:30	59	27	1328	1.22	0.86	No
		Quietest Baseline	5189	06:00 - 07:00	59	0	59	1.01	0.05	No
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	2489	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	2720	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1300	06:00 - 07:00	0	0	0	1.00	0.00	No
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	1260	6:30-7:30	0	9	423	1.34	1.26	No
		PM Peak	1393	3:30-4:30	0	9	423	1.30	1.15	No
		Quietest Baseline	898	06:00 - 07:00	0	0	0	1.00	0.00	No
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	1487	6:30-7:30	0	9	423	1.28	1.09	No
		PM Peak	1134	3:30-4:30	0	9	423	1.37	1.38	No
		Quietest Baseline	946	06:00 - 07:00	0	0	0	1.00	0.00	No
6	Bradhurst btw Grasslands and Lakeview	AM Peak	1197	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	1171	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1059	06:00 - 07:00	0	0	0	1.00	0.00	No
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	3150	6:30-7:30	0	9	423	1.13	0.55	No
		PM Peak	2697	3:30-4:30	0	9	423	1.16	0.63	No
		Quietest Baseline	1949	06:00 - 07:00	0	0	0	1.00	0.00	No
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	2603	6:30-7:30	225	9	648	1.25	0.97	No
		PM Peak	2626	3:30-4:30	225	9	648	1.25	0.96	No
		Quietest Baseline	2539	06:00 - 07:00	225	0	225	1.09	0.37	No
9	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	7792	6:30-7:30	20	9	443	1.06	0.24	No
		PM Peak	6075	3:30-4:30	20	9	443	1.07	0.31	No
		Quietest Baseline	7135	06:00 - 07:00	20	0	20	1.00	0.01	No
10	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	9171	6:30-7:30	20	9	443	1.05	0.20	No
		PM Peak	6021	3:30-4:30	20	9	443	1.07	0.31	No
		Quietest Baseline	5931	06:00 - 07:00	20	0	20	1.00	0.01	No
11	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	536	6:30-7:30	20	9	443	1.83	2.62	No
		PM Peak	558	3:30-4:30	20	9	443	1.79	2.54	No
		Quietest Baseline	330	06:00 - 07:00	20	0	20	1.06	0.26	No

Notes:

New PCEs = (no. of cars + no. of trucks(47))

PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs

Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

TABLE 5.10-5. COMPARISON OF EXISTING PCES TO ANTICIPATED FUTURE WITH THE PROJECT PCES DURING CONSTRUCTION (2006) WITIH UV FACILITY (CONSTRUCTION WORKER PARKING OPTION B).

	Route Segment	Period of Analysis (Weekday)	Existing PCEs (with UV Option A)	Time	New Passenger Car (Croton)	New Trucks (Croton)	New PCEs (Croton)	PCE Ratio	Incremental Change in dbA	Further Analysis Performed?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	4907	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	6322	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	2155	06:00 - 07:00	0	0	0	1.00	0.00	No
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	6599	6:30-7:30	59	27	1328	1.20	0.80	No
		PM Peak	6066	3:30-4:30	59	27	1328	1.22	0.86	No
		Quietest Baseline	5189	06:00 - 07:00	59	0	59	1.01	0.05	No
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	2489	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	2720	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1300	06:00 - 07:00	0	0	0	1.00	0.00	No
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	1260	6:30-7:30	0	9	423	1.34	1.26	No
		PM Peak	1393	3:30-4:30	0	9	423	1.30	1.15	No
		Quietest Baseline	898	06:00 - 07:00	0	0	0	1.00	0.00	No
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	1487	6:30-7:30	0	9	423	1.28	1.09	No
		PM Peak	1134	3:30-4:30	0	9	423	1.37	1.38	No
		Quietest Baseline	946	06:00 - 07:00	0	0	0	1.00	0.00	No
6	Bradhurst btw Grasslands and Lakeview	AM Peak	1197	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	1171	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1059	06:00 - 07:00	0	0	0	1.00	0.00	No
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	3548	6:30-7:30	0	9	423	1.12	0.49	No
		PM Peak	3095	3:30-4:30	0	9	423	1.14	0.56	No
		Quietest Baseline	1949	06:00 - 07:00	0	0	0	1.00	0.00	No
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	2671	6:30-7:30	225	9	648	1.24	0.94	No
		PM Peak	2694	3:30-4:30	225	9	648	1.24	0.94	No
		Quietest Baseline	2539	06:00 - 07:00	225	0	225	1.09	0.37	No
9	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	7792	6:30-7:30	20	9	443	1.06	0.24	No
		PM Peak	6331	3:30-4:30	20	9	443	1.07	0.29	No
		Quietest Baseline	7135	06:00 - 07:00	20	0	20	1.00	0.01	No
10	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	9171	6:30-7:30	20	9	443	1.05	0.20	No
		PM Peak	5958	3:30-4:30	20	9	443	1.07	0.31	No
		Quietest Baseline	5931	06:00 - 07:00	20	0	20	1.00	0.01	No
11	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	536	6:30-7:30	20	9	443	1.83	2.62	No
		PM Peak	558	3:30-4:30	20	9	443	1.79	2.54	No
		Quietest Baseline	330	06:00 - 07:00	20	0	20	1.06	0.26	No

Notes:

New PCEs = (no. of cars + no. of trucks(47))

PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs

Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

TABLE 5.10-6. COMPARISON OF EXISTING PCES TO ANTICIPATED FUTURE WITH THE PROJECT PCES DURING CONSTRUCTION (2006) WITIH UV FACILITY (CONSTRUCTION WORKER PARKING OPTION C).

	Route Segment	Period of Analysis (Weekday)	Existing PCEs (with UV Option A)	Time	New Passenger Car (Croton)	New Trucks (Croton)	New PCEs (Croton)	PCE Ratio	Incremental Change in dbA	Further Analysis Performed?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	4397	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	6331	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	2155	06:00 - 07:00	0	0	0	1.00	0.00	No
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	6585	6:30-7:30	59	27	1328	1.20	0.80	No
		PM Peak	6066	3:30-4:30	59	27	1328	1.22	0.86	No
		Quietest Baseline	5189	06:00 - 07:00	59	0	59	1.01	0.05	No
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	2490	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	2720	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1300	06:00 - 07:00	0	0	0	1.00	0.00	No
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	1261	6:30-7:30	0	9	423	1.34	1.26	No
		PM Peak	1394	3:30-4:30	0	9	423	1.30	1.15	No
		Quietest Baseline	898	06:00 - 07:00	0	0	0	1.00	0.00	No
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	1488	6:30-7:30	0	9	423	1.28	1.09	No
		PM Peak	1135	3:30-4:30	0	9	423	1.37	1.38	No
		Quietest Baseline	946	06:00 - 07:00	0	0	0	1.00	0.00	No
6	Bradhurst btw Grasslands and Lakeview	AM Peak	1197	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	1171	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1059	06:00 - 07:00	0	0	0	1.00	0.00	No
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	3348	6:30-7:30	0	9	423	1.13	0.52	No
		PM Peak	2784	3:30-4:30	0	9	423	1.15	0.61	No
		Quietest Baseline	1949	06:00 - 07:00	0	0	0	1.00	0.00	No
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	2628	6:30-7:30	225	9	648	1.25	0.96	No
		PM Peak	2661	3:30-4:30	225	9	648	1.24	0.95	No
		Quietest Baseline	2539	06:00 - 07:00	225	0	225	1.09	0.37	No
9	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	7802	6:30-7:30	20	9	443	1.06	0.24	No
		PM Peak	6368	3:30-4:30	20	9	443	1.07	0.29	No
		Quietest Baseline	7135	06:00 - 07:00	20	0	20	1.00	0.01	No
10	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	9181	6:30-7:30	20	9	443	1.05	0.20	No
		PM Peak	5995	3:30-4:30	20	9	443	1.07	0.31	No
		Quietest Baseline	5931	06:00 - 07:00	20	0	20	1.00	0.01	No
11	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	536	6:30-7:30	20	9	443	1.83	2.62	No
		PM Peak	558	3:30-4:30	20	9	443	1.79	2.54	No
		Quietest Baseline	330	06:00 - 07:00	20	0	20	1.06	0.26	No

Notes:

New PCEs = (no. of cars + no. of trucks(47))

PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs

Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

TABLE 5.10-7. COMPARISON OF EXISTING PCES TO ANTICIPATED FUTURE WITH THE PROJECT PCES DURING CONSTRUCTION (2006) WITIH UV FACILITY (CONSTRUCTION WORKER PARKING OPTION D).

	Route Segment	Period of Analysis (Weekday)	Existing PCEs (with UV Option A)	Time	New Passenger Car (Croton)	New Trucks (Croton)	New PCEs (Croton)	PCE Ratio	Incremental Change in dbA	Further Analysis Performed?
1	Saw Mill River Road btw Tarrytown Rd & I-287	AM Peak	4907	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	6349	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	2155	06:00 - 07:00	0	0	0	1.00	0.00	No
2	Saw Mill River Rd. btw Hunter Ln and Grasslands Rd.	AM Peak	6541	6:30-7:30	59	27	1328	1.20	0.80	No
		PM Peak	6061	3:30-4:30	59	27	1328	1.22	0.86	No
		Quietest Baseline	5189	06:00 - 07:00	59	0	59	1.01	0.05	No
3	Knollwood Rd btw Tarrytown Rd and I287	AM Peak	2489	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	2720	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1300	06:00 - 07:00	0	0	0	1.00	0.00	No
4	Knollwood Rd. btw I-287 and Hevelyne Rd	AM Peak	1260	6:30-7:30	0	9	423	1.34	1.26	No
		PM Peak	1393	3:30-4:30	0	9	423	1.30	1.15	No
		Quietest Baseline	898	06:00 - 07:00	0	0	0	1.00	0.00	No
5	Knollwood Rd. btw Hevelyne rd. and Grasslands Rd.	AM Peak	1487	6:30-7:30	0	9	423	1.28	1.09	No
		PM Peak	1134	3:30-4:30	0	9	423	1.37	1.38	No
		Quietest Baseline	946	06:00 - 07:00	0	0	0	1.00	0.00	No
6	Bradhurst btw Grasslands and Lakeview	AM Peak	1197	6:30-7:30	0	0	0	1.00	0.00	No
		PM Peak	1171	3:30-4:30	0	0	0	1.00	0.00	No
		Quietest Baseline	1059	06:00 - 07:00	0	0	0	1.00	0.00	No
7	Grasslands Rd. btw Bradhurst and Sprain Brook Pkwy	AM Peak	3150	6:30-7:30	0	9	423	1.13	0.55	No
		PM Peak	2697	3:30-4:30	0	9	423	1.16	0.63	No
		Quietest Baseline	1949	06:00 - 07:00	0	0	0	1.00	0.00	No
8	Grasslands Rd. btw Sprain Brook Pkwy and Walker Road	AM Peak	2603	6:30-7:30	225	9	648	1.25	0.97	No
		PM Peak	2626	3:30-4:30	225	9	648	1.25	0.96	No
		Quietest Baseline	2539	06:00 - 07:00	225	0	225	1.09	0.37	No
9	Saw Mill River rd. btw Dana Rd. and Stevens Ave	AM Peak	7772	6:30-7:30	20	9	443	1.06	0.24	No
		PM Peak	6393	3:30-4:30	20	9	443	1.07	0.29	No
		Quietest Baseline	7135	06:00 - 07:00	20	0	20	1.00	0.01	No
10	Saw Mill River Rd. bw Stevens Ave. and Saw Mill River Pkwy	AM Peak	9171	6:30-7:30	20	9	443	1.05	0.20	No
		PM Peak	6021	3:30-4:30	20	9	443	1.07	0.31	No
		Quietest Baseline	5931	06:00 - 07:00	20	0	20	1.00	0.01	No
11	Dana Rd./Cottage Rd btw Saw Mill River Rd and Penitentiary Rd.	AM Peak	536	6:30-7:30	20	9	443	1.83	2.62	No
		PM Peak	558	3:30-4:30	20	9	443	1.79	2.54	No
		Quietest Baseline	330	06:00 - 07:00	20	0	20	1.06	0.26	No

Notes:

New PCEs = (no. of cars + no. of trucks(47))

PCE ratio = (Existing PCEs + Project generated PCEs) / Existing PCEs

Incremental change in dBA = 10 log (PCE ratio)

Methodology to establish AM/PM peak hour existing and project-induced PCEs discussed in Data Collection and Impact Methodologies, Section 4.10, Noise

Quietest hour existing PCEs calculated from traffic data (automatic traffic recorders, vehicle classifications, and turning movement counts). ATRs and VCs were used establish traffic volume and mix along a route segment. Where ATRs were not available, the TMC count from the peak hour for the adjacent intersection was used to establish the trip assignment for the route segment. ATR and VC data from the nearest physically similar route sement for the quietest hour was used to establish volume and mix.

Quietest hour project-induced PCEs derived by assuming deliveries constant between 7 AM and 5 PM. Route segments established in Traffic Analysis Section.

5.10.2. Baseline Conditions

5.10.2.1. Existing Conditions

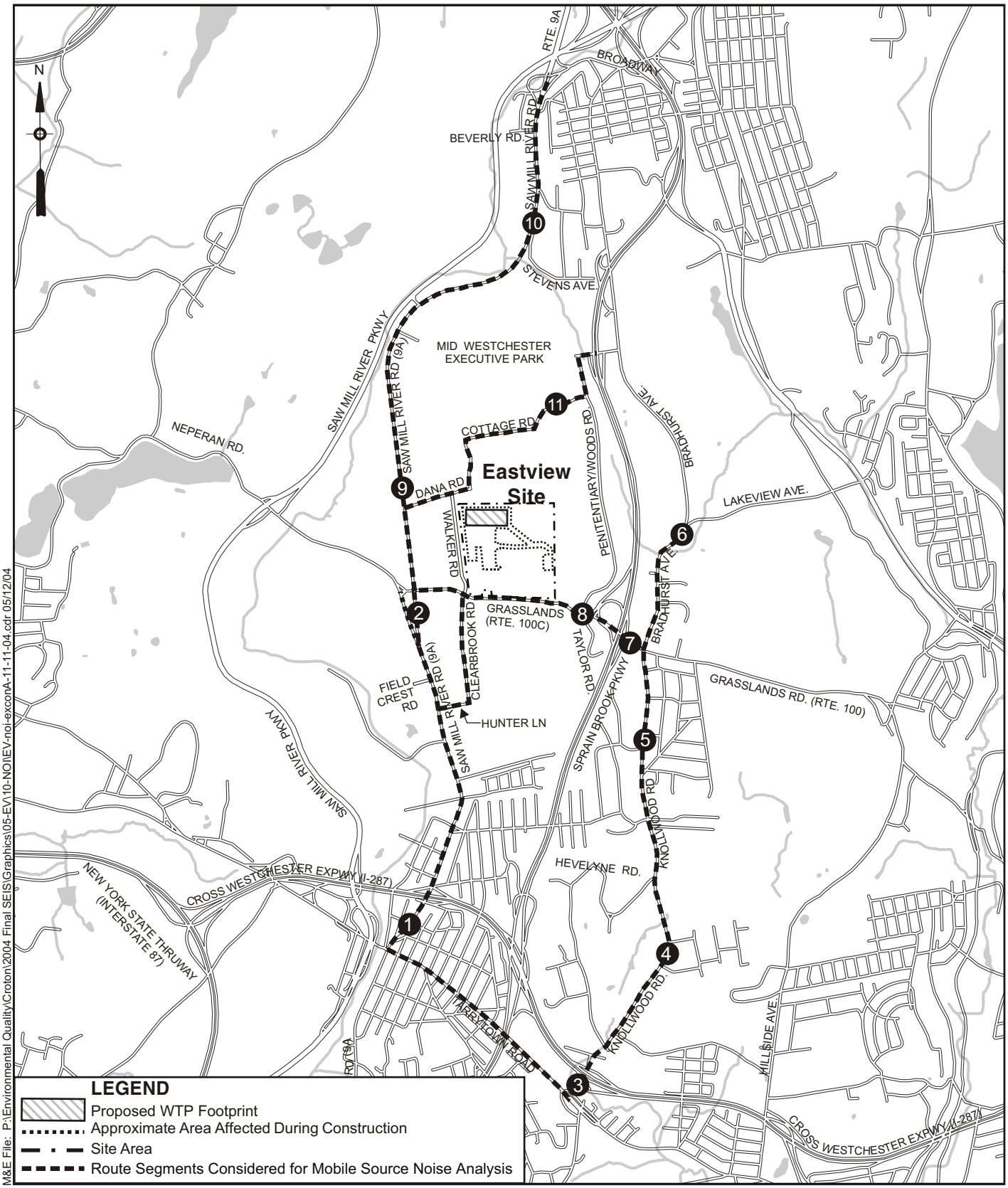
5.10.2.1.1. Mobile Source Noise

The roadways considered for mobile source noise analysis at the proposed plant site are those presented in Table 5.10-8 and Figure 5.10-1. The roadways considered for analysis were those local routes identified as possible transportation routes that connect the major thoroughfares to the site. Sensitive receptors along the proposed project's transportation routes were identified. Route segments that did not contain sensitive receptors along them were not considered for further noise analysis. For the site, the major thoroughfare for commercial vehicles (i.e. trucks) is the Cross Westchester Expressway (I-287) to the south. Commuter traffic (i.e. passenger cars) could use the Saw Mill River Parkway to the west and the Sprain Brook and Taconic State Parkways to the east. Therefore, the potential for noise impacts along those proposed project transportation routes connecting the I-287, Sprain Brook Parkway and Saw Mill River Parkway to the site was evaluated.

TABLE 5.10-8. ROUTE SEGMENTS CONSIDERED FOR MOBILE SOURCE NOISE ANALYSIS AT EASTVIEW SITE

No.	Route Segment
1	Saw Mill River Road between Tarrytown Rd & I-287
2	Saw Mill River Rd. between Hunter Lane and Grasslands Rd.
3	Knollwood Rd between Tarrytown Rd and I-287
4	Knollwood Rd. between I-287 and Hevelyne Rd
5	Knollwood Rd. between Hevelyne Rd. and Grasslands Rd.
6	Bradhurst between Grasslands Rd. and Lakeview Avenue
7	Grasslands Rd. between Bradhurst and Sprain Brook Pkwy
8	Grasslands Rd. between Sprain Brook Pkwy and Walker Rd.
9	Saw Mill River Rd. between Dana Rd. and Stevens Ave
10	Saw Mill River Rd. between Stevens Ave. and Saw Mill River Pkwy
11	Dana Rd./Cottage Rd between Saw Mill River Rd and Penitentiary Rd.

As shown above in Tables 5.10-1 through 5.10-7, none of the noise-sensitive route segments would experience a doubling of PCEs. It was concluded that the noise-sensitive route segments in the vicinity of the site would not exceed the 3-5 dBA impact threshold established in the *CEQR Technical Manual*. Noise-sensitive route segments associated with the proposed plant site were not examined further.



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NOTE: Numbers correspond to route segments listed in Table 5.10 - 2.

Eastview Site
Route Segments
Mobile Source Noise Analysis

Croton Water Treatment Plant

Figure 5.10 - 1

5.10.2.1.2. Stationary Source Noise

Stationary source noise monitoring was performed to establish existing baseline conditions at the proposed water treatment plant site. Baseline monitoring established the existing noisiest and quietest periods throughout the day. Noise monitoring was performed at the northern boundary of the proposed construction site (see Figure 5.10-2). The dominant existing noise source at this location was from the ventilation louvers situated on top of the Westchester County Department of Laboratories and Research building that is located approximately 80 feet to the north of the monitoring location.

Baseline noise level measurements were collected for 24 hours on a weekday and on a Sunday. This monitoring was performed in order to establish the period of the day with the potential for the greatest incremental change in noise. Monitoring periods were chosen to reflect both the anticipated construction and operations schedules at the proposed plant. Plant operations would be continuous (24 hours a day and seven days a week). Construction activities are anticipated to take place on Monday through Friday from 7:00 AM to 6:00 PM).

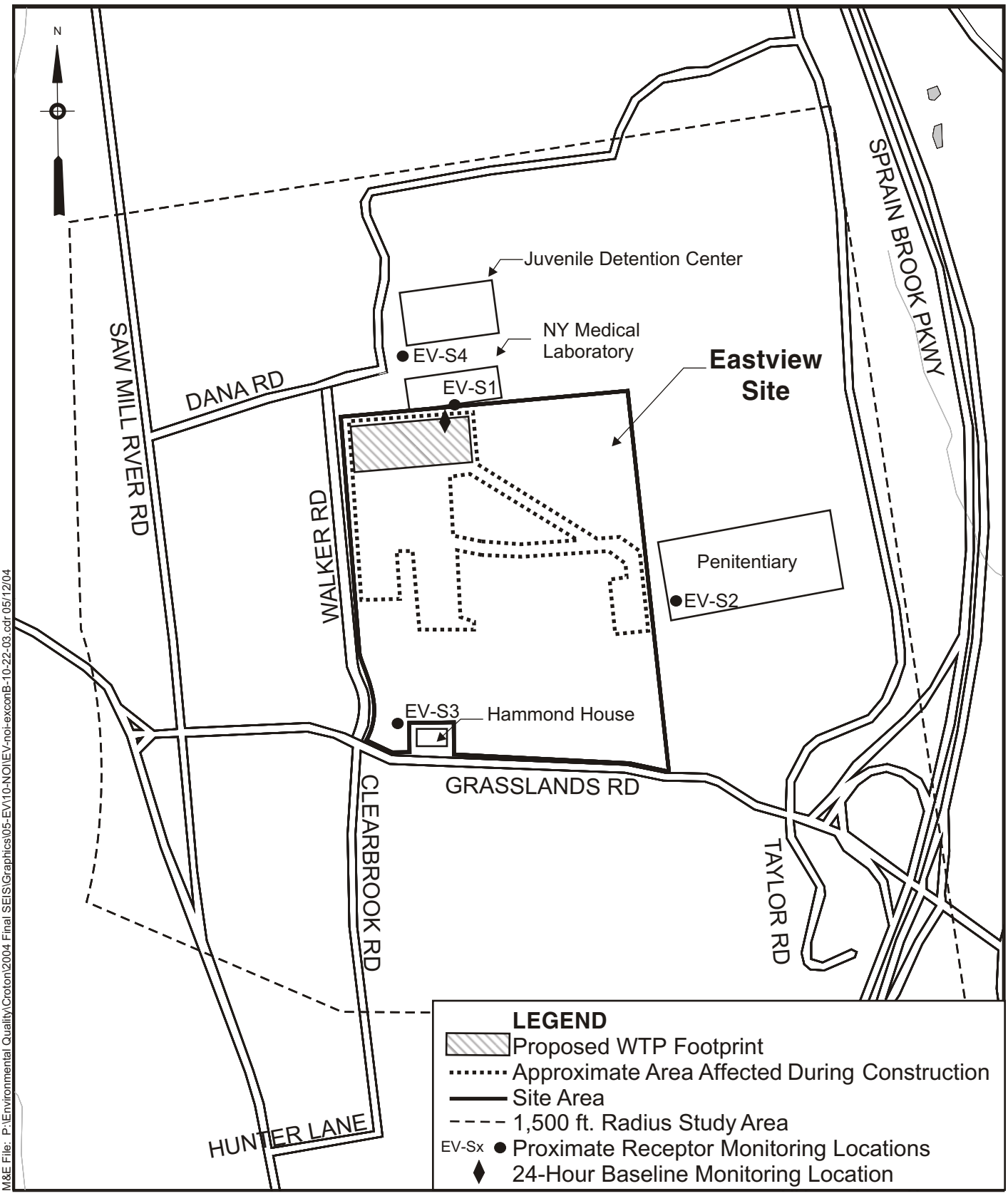
Weekday Baseline Monitoring. The 24-hour baseline noise levels measured on a weekday are presented in Table 5.10-9. For proposed operating hours (i.e. 24 hours), the existing noise level during the quietest period (between 3:00 AM and 4:00 AM) had a Leq of 52.2 dBA and the noisiest period (between 7:00 PM and 8:00 PM) had a Leq of 58.4 dBA.

During proposed construction hours (between 7:00 AM and 6:00 PM) existing noise level during the quietest period (2:00 PM through 3:00 PM) had a Leq of 52.8 dBA and the noisiest period (between 1:00 PM and 2:00 PM) had a Leq of 57.5 dBA.

TABLE 5.10-9. MEASURED 24-HOUR NOISE LEVELS (Leq) AT EASTVIEW ON A WEEKDAY

Hourly Leq (dBA)												
TIME	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
AM	52.5	53.1	53.4	**52.2**	52.5	52.7	55.4	55.6	53.4	55.3	54.1	54.4
PM	52.8	**57.5**	**52.8**	55.9	55.4	55.6	54.4	**58.4**	57.6	56.8	56.6	56.7

Sunday Baseline Monitoring. The 24-hour baseline noise levels measured on a Sunday are presented in Table 5.10-10. For proposed operating hours (i.e. 24 hours), the existing noise level during the quietest period (between 3:00 AM and 4:00 AM) had a Leq of 52.4 dBA, and the noisiest period (between 9:00 AM and 10:00 AM) had a Leq of 58.5 dBA.



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Eastview Site Stationary Noise Source Monitoring Locations

Croton Water Treatment Plant

Figure 5.10-2

TABLE 5.10-10. MEASURED 24-HOUR NOISE LEVELS (Leq) AT EASTVIEW ON A SUNDAY

Hourly Leq (dBA)												
TIME	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
AM	53.3	53.0	52.8	**52.4**	52.5	53.7	54.7	53.8	54.0	**58.5**	54.6	53.5
PM	54.1	54.7	53.7	54.4	55.2	55.3	58.0	57.0	55.7	54.5	54.3	53.7

Following 24-hour baseline monitoring, 20-minute measurements were taken at representative sensitive receptors proximate to the site that may experience a noise impact due to construction and/or operational activities (see Figure 5.10-2). Measurements were taken during the quietest and noisiest periods as determined by the 24-hour baseline monitoring. Table 5.10-11 presents details concerning the proximate receptors.

Measurements were conducted at each receptor during those hours that the receptor was sensitive to noise contributions. Residences were assumed to be occupied (and therefore sensitive to noise contributions) at all times.

TABLE 5.10-11. DESCRIPTION OF NOISE SENSITIVE RECEPTORS FOR STATIONARY SOURCE ANALYSIS

Receptor Name	Description of Receptors
EV-S1	New York State Medical Research Laboratory
EV-S2	Westchester County Penitentiary
EV-S3	"Hammond House" - Residence at Grasslands and Hammond House Roads
EV-S4	Woodfield Cottage Juvenile Detention Center

Weekday Monitoring at Receptors. Twenty-minute monitoring periods and weekday noise levels at these proximate receptors are presented in Table 5.10-12. The noisiest and quietest time periods described above correspond to those times as established by the initial baseline monitoring.

TABLE 5.10-12. TWENTY-MINUTE MEASURED NOISE LEVELS AT SENSITIVE RECEPTORS AT EASTVIEW ON A WEEKDAY (dBA)

Monitoring Location	Monitoring Period	Monitoring Time	Noise Level (Leq)	Noise Level (L_{10})
EV-S1	Quietest Nighttime	3-5 AM	52.2	52.4
	Noisiest Nighttime	7-9 PM	58.4	57.2
	Quietest Daytime	2-3 PM	52.8	53.4
	Noisiest Daytime	1-2 PM	57.5	56.2
EV-S2	Quietest Nighttime	3-5 AM	53.4	53.8
	Noisiest Nighttime	7-9 PM	56.0	56.8
	Quietest Daytime	2-3 PM	56.3	57.6
	Noisiest Daytime	1-2 PM	56.6	57.2

TABLE 5.10-12. TWENTY-MINUTE MEASURED NOISE LEVELS AT SENSITIVE RECEPTORS AT EASTVIEW ON A WEEKDAY (dBA)

Monitoring Location	Monitoring Period	Monitoring Time	Noise Level (Leq)	Noise Level (L_{10})
EV-S3	Quietest Nighttime	3-5 AM	47.0	47.6
	Noisiest Nighttime	7-9 PM	60.6	62.0
	Quietest Daytime	2-3 PM	54.6	57.2
	Noisiest Daytime	1-2 PM	56.2	56.0
EV-S4	Quietest Nighttime	3-5 AM	51.1	51.4
	Noisiest Nighttime	7-9 PM	58.4	59.2
	Quietest Daytime	2-3 PM	56.7	58.0
	Noisiest Daytime	1-2 PM	58.7	60.2

Sunday Monitoring at Receptors. Twenty-minute monitoring periods and noise levels for a Sunday at proximate receptors are presented in Table 5.10-13.

TABLE 5.10-13. TWENTY-MINUTE MEASURED NOISE LEVELS AT SENSITIVE RECEPTORS AT EASTVIEW ON A SUNDAY (dBA)

Monitoring Location	Monitoring Period	Monitoring Time	Noise Level (Leq)	Noise Level (L_{10})
EV-S1	Quietest	3-5 AM	52.4	52.8
	Noisiest	9-10 AM	58.5	55.0
EV-S2	Quietest	3-5 AM	47.8	48.2
	Noisiest	9-10 AM	48.4	49.2
EV-S3	Quietest	3-5 AM	47.0	47.8
	Noisiest	9-10 AM	51.4	52.6
EV-S4	Quietest	3-5 AM	51.2	51.8
	Noisiest	9-10 AM	56.0	57.0

5.10.2.2. Future Without the Project

The Future Without the Project conditions were developed for the anticipated year of operation and the anticipated peak year of construction for the proposed Croton project. The anticipated year of operation for the proposed Croton project was 2010, and the anticipated year of peak construction for mobile source noise was 2006 and stationary source noise was 2005.[1]

[1] Construction trucks are the types of trucks that would generate the greatest incremental change in noise levels along noise-sensitive route segments. The year with the month that had the greatest number of construction trucks traveling the roads to and from the Eastview Site therefore was selected for the mobile source analysis. Based on engineering resource projections, the month with the highest volume of truck traffic would be April 2006. 2006, therefore, was selected as the peak year for construction-related mobile source analysis. The anticipated year of construction for the stationary noise source analysis was determined by analyzing noise levels at receptors based on engineering projections of monthly construction-equipment loading. The year with the greatest noise levels resulting from construction activities at the proposed site (2005) was used as the analysis year for stationary construction noise. This is discussed in greater detail in the Potential Construction Impacts section below.

For each year, two scenarios were assessed: one in which the Cat/Del UV Facility is not located on the Eastview Site and another in which the Cat/Del UV Facility is located on the site. The Cat/Del UV Facility would be located in the southeastern area of the Mount Pleasant parcel. It should be noted that the Eastview Site is the only location under consideration for the Cat/Del UV Facility. This scenario is being evaluated because the Cat/Del UV Facility has not yet received its necessary approvals from the Towns of Mount Pleasant or Greenburgh or other approval entities. By the peak construction year, two additional NYCDEP projects (a Police Precinct and possibly an Administration Building[2]) could be located on the Eastview Site. The Police Precinct may be located in the southwest corner of the Mount Pleasant parcel. The Administration Building is less certain as the Eastview Site is one of several properties currently being evaluated as a possible site for that particular building[3]. In addition to these projects, NYCDEP's Kensico-City Tunnel (KCT) may be under construction at the Eastview Site starting in 2009. All of these NYCDEP projects are analyzed in this Final SEIS to the extent to which information is available. They are all separate actions from the proposed project and will undergo their own independent environmental reviews. The staging areas for these projects could overlap with each other and the Croton project staging area. The generic impacts associated with the KCT are discussed in Section 3.8.2, Treated Water Conveyance Alternatives.

5.10.2.2.1. Without Cat/Del UV Facility at Eastview Site

Mobile Source Noise. Based on the results of the PCE screening analysis previously discussed (Tables 5.10-1 and 5.10-2), none of the identified noise-sensitive route segments in the site vicinity would experience a 3 dBA or more increase in noise levels due to the project. As a result, the Future Without the Project traffic volumes and related noise levels along the transportation roadways leading to and from the site did not require further analysis.

Stationary Source Noise. Future Without the Project (without Cat/Del UV Facility) noise levels at proximate receptor locations for the construction and operation phases of the proposed project were determined for the peak stationary source construction year (2005) and the build year (2010). A review of future planned developments in the vicinity of the site for the years ending 2005 and 2010 revealed that three possible projects (the KCT, the Administration Building in the Town of Greenburgh, and the NYCDEP Police Precinct) could be built on the Eastview Site commencing 2005-2009. This construction schedule coincides with the proposed Croton project schedule. Whereas it is known that construction noise would be associated with these projects, design information currently is not available. As such, the future baseline noise levels at local receptors for the operations and construction noise analysis years were determined without incorporating potential noise contributions from these projects.

No new additional stationary noise sources are anticipated that would increase the existing background noise levels at proximate receptor locations. Therefore, the Future Without the Project (without Cat/Del UV Facility) noise levels for both 2005 and 2010 at stationary source

[2] This depends on the results of a siting evaluation that is currently ongoing. The siting decision will be evaluated and discussed as part of a separate independent environmental review.

[3] In addition to these projects, NYCDEP's Kensico-City Tunnel may be under construction at the Eastview Site starting in 2009. Therefore, the 2010 analysis year considers the possibility of this project.

receptors located near the proposed plant were not anticipated to change from those existing noise levels measured during the noise monitoring program.

5.10.2.2.2. With Cat/Del UV Facility at Eastview Site

Mobile Source Noise. Based on the results of the PCE screening analysis previously discussed (Tables 5.10-3 through 5.10-4), none of the identified noise-sensitive route segments in the site vicinity would experience a 3 dBA or more increase in noise levels due to the proposed project with the Cat/Del UV Facility at the Eastview Site. As a result, the Future Without the Project traffic volumes and related noise levels along the transportation roadways leading to and from the site did not require further analysis.

Stationary Sources. Future Without the Project noise levels (with the Cat/Del Facility) at proximate receptor locations for the construction and operation phases of the proposed project were determined for the build year (2010) and the peak stationary source construction year (2005). These Future Without the Project noise levels included the noise contribution of the operating Cat/Del UV facility for 2010 and the Cat/Del UV Facility under construction for 2005. Measured existing noise levels at each of the receptors were logarithmically added to the predicted contribution from the Cat/Del UV Facility operations in order to establish this future noise level.

Operation of the Cat/Del UV Facility on the Eastview Site would not exceed the Town of Mount Pleasant criteria for sensitive receptors identified near the Cat/Del UV facility.[4] In addition, the combined mobile and stationary noise generated by the Cat/Del UV Facility would not result in a 3 dBA or more increase in noise levels.

Table 5.10-14 presents Future Without the Project (with the Cat/Del Facility) noise levels at stationary source receptors located near the proposed plant for the future build year (2010). As discussed in greater detail in Section 5.10.3.1.1 below, three periods of the week during normal water treatment plant operations were analyzed to account for weekday truck delivery hours (7:00 am – 5:00 pm), weekday non-delivery hours (5:00 pm – 7:00 am), and weekends.

TABLE 5.10-14. FUTURE WITHOUT THE PROJECT (WITH CAT/DEL) NOISE LEVELS FOR OPERATIONS ANALYSIS YEAR (2010) (LEQ, DBA)

Monitoring Location	Time Period	Monitoring Period	Future Without Project Noise (without Cat/Del UV Facility)[1]	Future Cat/Del UV Facility Operations Noise[2]	Future Without Project Noise (with Cat/Del UV Facility)[3]
Weekday Truck Delivery Hours (7:00 am – 5:00 pm)					
EV-S1	2:00-3:00 pm	Quietest	52.8	43.4	53.3
	1:00-2:00 pm	Noisiest	57.5	43.4	57.7
EV-S2	2:00-3:00 pm	Quietest	56.3	52.2	57.7

[4] During weekday daytime and nighttime, and weekend operation hours. *Draft EIS for the Catskill/Delaware UV Facility*, May 2004.

TABLE 5.10-14. FUTURE WITHOUT THE PROJECT (WITH CAT/DEL) NOISE LEVELS FOR OPERATIONS ANALYSIS YEAR (2010) (LEQ, DBA)

Monitoring Location	Time Period	Monitoring Period	Future Without Project Noise (without Cat/Del UV Facility)[1]	Future Cat/Del UV Facility Operations Noise[2]	Future Without Project Noise (with Cat/Del UV Facility)[3]
	1:00-2:00 pm	Noisiest	56.6	52.2	57.9
EV-S3	2:00-3:00 pm	Quietest	54.6	51.3	56.3
	1:00-2:00 pm	Noisiest	56.2	51.3	57.4
EV-S4	2:00-3:00 pm	Quietest	56.7	42.0	56.8
	1:00-2:00 pm	Noisiest	58.7	42.0	58.8
Weekday Non-Truck Delivery Hours					
EV-S1	3:00 -5:00 am	Quietest	52.2	23.1	52.2
	7:00-9:00 pm	Noisiest	58.4	23.1	58.4
EV-S2	3:00 -5:00 am	Quietest	53.4	27.7	53.4
	7:00-9:00 pm	Noisiest	56.6	27.7	56.6
EV-S3	3:00 -5:00 am	Quietest	47.0	28.8	47.1
	7:00-9:00 pm	Noisiest	60.6	28.8	60.6
EV-S4	3:00 -5:00 am	Quietest	51.1	21.4	51.1
	7:00-9:00 pm	Noisiest	58.7	21.4	58.7
Weekend Hours					
EV-S1	3:00-5:00 am	Quietest	52.4	23.1	52.4
	9:00-10:00am	Noisiest	58.5	23.1	58.5
EV-S2	3:00-5:00 am	Quietest	47.3	27.7	47.3
	9:00-10:00am	Noisiest	48.4	27.7	48.4
EV-S3	3:00-5:00 am	Quietest	47.0	28.8	47.1
	9:00-10:00am	Noisiest	51.4	28.8	51.4
EV-S4	3:00-5:00 am	Quietest	51.2	21.4	51.2
	9:00-10:00am	Noisiest	56.0	21.4	56.0

[1]Croton Alone Noise same as measured existing noise levels
[2]Future Cat/Del UV Ops Noise: As presented in *Draft Environmental Impact Study for the Catskill/Delaware UV Facility*, Section 4-11, pp. 26-28, Tables 4.11-18, -19, and -20.
[3]Future Without Noise (with Cat/Del) = logarithmic addition of Future Without (without Cat/Del) and Future Cat/Del UV Ops Noise

Table 5.10-15 presents Future Without the Project (with the Cat/Del UV Facility) noise levels at stationary source receptors located near the proposed plant for the future peak construction year (2005).

TABLE 5.10-15. FUTURE WITHOUT THE PROJECT (WITH CAT/DEL) NOISE LEVELS CONSTRUCTION ANALYSIS YEAR (2005) (Leq, dBA)

Monitoring Location	Time Period	Monitoring Period	Future Without Project Noise (without Cat/Del UV Facility)[1]	Future Cat/Del UV Facility Peak Construction Noise[2]	Future Without Project Noise (with Cat/Del UV Facility)[3]
EV-S1	2:00-3:00 pm	Quietest	52.8	69.3	69.4
	1:00-2:00 pm	Noisiest	57.5	69.3	69.6
EV-S2	2:00-3:00 pm	Quietest	56.3	64.9	65.5
	1:00-2:00 pm	Noisiest	56.6	64.9	65.5
EV-S3	2:00-3:00 pm	Quietest	54.6	63.9	64.4
	1:00-2:00 pm	Noisiest	56.2	63.9	64.6
EV-S4	2:00-3:00 pm	Quietest	56.7	60.0	61.7
	1:00-2:00 pm	Noisiest	58.7	60.0	62.4

[1]Croton Alone Noise same as measured existing noise levels
[2]Future Cat/Del UV Peak Construction Noise: As presented in *Draft Environmental Impact Study for the Catskill/Delaware UV Facility*
[3]Future Without Noise (with Cat/Del) = logarithmic addition of Future Without (without Cat/Del) and Future Cat/Del UV Peak Construction Noise

5.10.3. Potential Impacts

The potential impacts from project and construction activities are represented for the two scenarios described in the Future Without the Project: one scenario in which the Cat/Del UV Facility is not located at the Eastview, and one scenario in which the Cat/Del UV Facility is located at the Eastview Site. The impacts of the construction and operation of the Cat/Del UV Facility by itself are described in the Draft EIS for that project issued by NYCDEP in May 2004.

5.10.3.1. Potential Project Impacts

The anticipated year of operation for the proposed Croton project is 2010. For each scenario, potential project-induced noise level increases were assessed by comparing the Future With the Project conditions against the Future Without the Project conditions for the year 2010.

The potential additional noise generated by the proposed plant during normal operations was analyzed at sensitive receptor locations in the vicinity of the water treatment plant site. As part of the mobile and stationary source analysis, future noise levels for the Future With the Project year (2010) were projected by adding the noise contribution from equipment used during operations to the Future Without the Project noise level. The analysis year for operations at the site was 2010.

The proposed water treatment plant site falls within the jurisdiction of the Town of Mount Pleasant. Table 5.10-16 presents limitations to noise levels from operations as presented in the Code of the Town of Mount Pleasant. The ordinance states that no device shall operate that produces a sound level exceeding the limitations stated below. As opposed to the CEQR incremental threshold, Mount Pleasant's noise level limits are absolute values that limit the amount of noise that the proposed plant may generate. In addition to the 3-5 dBA impact threshold established under CEQR, the future operations-induced noise levels were compared to these sound level limits. The proposed Eastview Site lies within the "Public Utility/Office Building" (OB-2) zoning district.

Receptors surrounding the site are in areas zoned as residential (R-20 and R-40). As prescribed in the Town of Mount Pleasant Code, noise levels within any residential-zoned district shall not exceed the noise levels resulting from operations presented below.

TABLE 5.10-16. NOISE LIMITS[1] FOR OPERATIONS IN TOWN OF MOUNT PLEASANT (L_{eq}, dBA)

Daytime (8:00 am – 6:00 pm)		Nighttime (6:00 pm - 8:00 am)	
Residential	**Commercial**	**Residential**	**Commercial**
65	65	55	65

[1]Source: Code of the Town of Mount Pleasant, New York, Part II, Chapter 139 (Noise), Article IV.

5.10.3.1.1. Without Cat/Del UV Facility at Eastview Site

Mobile Source Noise. Potential impacts from mobile noise sources resulting from the proposed plant operations were assessed. As discussed above, 2010 was selected as the peak year for this analysis. The preliminary PCE screening analysis previously discussed was used to determine whether project-induced traffic would result in a doubling or more of the existing PCEs present along the noise-sensitive route segments identified in the vicinity of the site. In accordance with the provisions outlined in the *CEQR Technical Manual*, a doubling of PCEs along a noise study route segment corresponds to an increase of 3 dBA. This increase would prompt a detailed analysis. On the basis of the preliminary PCE analysis (Table 5.10-1 above), it was determined that none of the identified noise-sensitive route segments would experience a doubling of PCEs. Therefore, it was concluded that the contribution from mobile sources to the total project-generated noise experienced at sensitive receptors would not result in a 3 dBA or more increase in noise levels.

Stationary Source Noise. The Future With the Project noise levels at each of the receptors were established by adding the noise contribution from operations to the baseline Future Without the Project noise levels for the analysis year 2010. Potential impacts from noise generated by the equipment used during normal operations at the proposed plant site were determined for the sensitive receptors identified near the proposed plant site. Figure 5.10-2 shows the location of the sensitive receptors.

Since the proposed plant would operate continuously (24 hours a day and 7 days a week), both daytime and nighttime analyses were conducted. To account for the proposed truck delivery hours of 7:00 AM to 5:00 PM on weekdays, the nighttime and weekend analyses excluded

operations at the loading and unloading docks. Idling trucks and off-loading activities would represent an additional noise contribution that would not be present during non truck-delivery hours. Therefore, separate noise analyses for project impacts were performed for weekdays during truck delivery hours, for weekdays during non-delivery hours, and for weekends (discussed below).

Engineering drawings were used to determine the location of each piece of equipment within the plant in order to establish the distance from the equipment to each receptor. Also considered in this analysis was the attenuation that resulted from the thickness and composition of proposed plant walls through which noise from operations would travel. Walls within the proposed plant would serve as noise barriers.

A noise prediction algorithm was used to calculate the noise levels resulting from plant operations at each of the receptors. The noise algorithm[5] considered the noise levels of operations equipment, the distance from the equipment to the receptor, and the noise attenuation resulting from walls within the plant. The algorithm is presented and discussed in greater detail in Section 4.10, Data Collection and Impact Methodologies, Noise. Equipment that generated more than 55 dBA was considered in this analysis.

For the purpose of this analysis, it was assumed that the plant was running at maximum capacity, which would correspond to the maximum possible operations noise. Table 5.10-17 presents the proposed plant operations equipment (including the associated noise level and quantity of each equipment) that would be used at the proposed plant. For each identified piece of equipment, the noise level under normal operating conditions was established from manufacturer's specifications.

TABLE 5.10-17. OPERATIONS EQUIPMENT DATA FOR EASTVIEW SITE

Equipment Name	Number of Equipment[1]	Equipment Noise Level (dBA)[2]	Reference Distance (feet)[3]
MAIN TREATMENT PROCESS			
Raw Water Pumps at Water Treatment Plant Site	6	85	3
Rapid Mixers (1st Stage)	8	80	3
First Stage Vertical Flocculators	96	75	3
DAF Recycle Pumps	10	75	3.3
DAF Air Compressors	6	68	3.3
Filter Air Scour Blowers	8	85	3.3
Filter Backwash Pumps	6	74	3.3
RESIDUALS TREATMENT			
Filter to Waste Recycle Pumps	8	85	3
Waste Backwash Pumps	8	85	3
Floated Solids Buffer Tank Pumps	8	57	3.3
Waste Backwash water solids Pumps	8	85	3

[5] City of New York. October 2001. CEQR Technical Manual.

TABLE 5.10-17. OPERATIONS EQUIPMENT DATA FOR EASTVIEW SITE

Equipment Name	Number of Equipment[1]	Equipment Noise Level (dBA)[2]	Reference Distance (feet)[3]
Floated Solids Buffer Tanks Mixers	8	85	3
Centrifuge Feed Pumps	6	80	3
Centrate Pumps	3	80	3
Centrate Recirculation Pumps	2	85	3
Screw Conveyor	4	64	3.3
CHEMICALS/GATES/VALVES/ METERS			
Sodium Hypochlorite Pump	8	65	3.3
Sulfuric Acid Pump	8	65	3.3
Polymer – Coagulant Pump	52	65	3.3
Sodium Hypochlorite Pump	6	65	3.3
Corrosion Inhibitor Pump	6	65	3.3
Sodium Hydroxide Pump	6	65	3.3
Hydrofluorosilicic Acid Pump	6	83	3.3
Ammonia Pump	3	83	3.3
FeCl Metering Pumps	6	83	3.3
Polymer Blending Unit	4	70	3
Polymer Metering Pump	6	65	3.3
Sodium Hypochlorite Meter	6	83	3.3
Corrosion Inhibitor Meter	2	83	3.3
Sodium Hydroxide Meter	2	83	3.3
Hydrofluorosilicic Acid Meter	2	83	3.3
Ferric Chloride Transfer Pump	2	83	3.3
Polymer Transfer Pump	2	60	3
Sulfuric Acid Pump	4	70	3
Hydrofluorosilicic Acid Pump	4	70	3
Phosphoric Acid Pump	4	70	3
Sodium Hydroxide Pump	4	70	3
Dilution Water Pumps	6	85	3
MAIN SUB-STATION BUILDING			
Service Transformers	4	76	3
Current Limiting Reactor	4	70	3
Dry Type Transformer, 45 KVA	2	45	3
ADMINISTRATION BUILDING			
Dry Type Transformers, 45 KVA	2	45	3
Emergency Generator	2	95	23
FIRE PROTECTION			
Fire Pumps	2	85	3
Sewage Ejectors	4	30	3
Sump Pumps	10	30	3
Duplex Sewage Ejectors	2	30	3
Potable Water Booster Pumps	1	60	3

TABLE 5.10-17. OPERATIONS EQUIPMENT DATA FOR EASTVIEW SITE

Equipment Name	Number of Equipment[1]	Equipment Noise Level (dBA)[2]	Reference Distance (feet)[3]
Flushing Water System Booster Pumps	1	60	3
HVAC			
Heating and Ventilating Units	18	81	3.3
Heating and Ventilating Units	1	78	3.3
Heating and Ventilating Units	3	82	3.3
Heating and Ventilating Units	2	105	3.3
Air Conditioning	6	80	3.3
Exhaust Fans	28	78	3.3
Chillers	2	85	3
Fire Tube Boilers	3	85	3
Hot Water Pumps	3	74	3
Chilled Water Pumps	2	79	3
HOISTS			
Pump Station	1	70	3
Residuals, Mixer Area	1	23	10
OUTSIDE SOURCES			
Truck Chemical uploading Bay South	2	80	50
Truck Loading Bay North	2	80	50

[1] Equipment to be used in water treatment plant established from engineering drawings.
[2] Noise levels established by contacting manufacturer.
[3] Reference distance from contacting manufacturer.

Normal operations at the completed water treatment plant are not anticipated to vary significantly over the course of a day. Noise levels from normal operations equipment, therefore, also are not anticipated to vary due to equipment noise levels. Since the proposed plant would operate continuously (24 hours a day and 7 days a week), both daytime and nighttime analyses were conducted. However, trucks are anticipated to make deliveries only during weekdays between the hours of 7:00 AM and 5:00 PM. Idling trucks and off-loading activities would represent an additional noise contribution that would not be present during the evening and on weekends. In order to account for this additional noise contribution, three separate possible operating parameters were analyzed as described below:

- The first parameter considered normal operations with the addition of delivery trucks for the hours of 7:00 AM to 5:00 PM on weekdays.

- The second parameter considered normal operations for weekdays outside anticipated truck delivery hours (i.e. from 5:00 PM to 7:00 AM). The contribution of trucks to the noise level was not included in this parameter.

- The third parameter considered normal operations for weekends. Truck deliveries are not anticipated on weekends. The contribution of trucks to the noise level was not included in this parameter.

Following the calculation of noise levels at sensitive receptors resulting from the proposed plant operations, the contribution from operations was added to the baseline noise level for the future analysis year (2010) in order to derive the Future With the Project noise levels.

Table 5.10-18 compares Future Without the Project (without Cat/Del UV Facility) noise levels with the future anticipated operations noise levels at each receptor during the noisiest and quietest weekday truck delivery hours (between 7:00 AM – 5:00 PM). It is anticipated that receptor EV-S4 would have the highest noise levels of 58.8 dBA from 1:00 – 2:00 PM. The greatest incremental change would be 2.6 dBA at EV-S3. It was concluded, therefore, that the contribution of stationary source noise to the total noise generated from normal operations and experienced at sensitive receptors during weekday truck delivery hours would not exceed the 3-5 dBA threshold used to define significance using established CEQR criteria.

In addition, predicted noise levels generated from normal plant operations during these hours would not exceed the Town of Mount Pleasant's daytime noise level limits of 65 dBA for a residential zone.

TABLE 5.10-18. MAXIMUM NOISE LEVELS FROM OPERATIONS AT SENSITIVE RECEPTORS NEAR EASTVIEW SITE DURING WEEKDAY TRUCK-DELIVERY HOURS (Leq, dBA)

Proximate Receptor	Monitoring Period	Future Without Project Noise Level (2010)	Predicted Operations Noise Level	Total Future Operations Noise Level[1]	Incremental Change	Exceed Threshold (Yes/No)
EV-S1	2-3 pm (Quietest)	52.8	45.6	54.8	0.6	No
	1-2 pm (Noisiest)	57.5	45.6	57.8	0.3	No
EV-S2	2-3 pm (Quietest)	56.3	35.6	56.3	0	No
	1-2 pm (Noisiest)	56.6	35.6	56.6	0	No
EV-S3	2-3 pm (Quietest)	54.6	53.7	57.2	2.6	No
	1-2 pm (Noisiest)	56.2	53.7	58.1	1.9	No
EV-S4	2-3 pm (Quietest)	56.7	42.9	56.9	0.2	No
	1-2 pm (Noisiest)	58.7	42.9	58.8	0.1	No

TABLE 5.10-18. MAXIMUM NOISE LEVELS FROM OPERATIONS AT SENSITIVE RECEPTORS NEAR EASTVIEW SITE DURING WEEKDAY TRUCK-DELIVERY HOURS (Leq, dBA)

Proximate Receptor	Monitoring Period	Future Without Project Noise Level (2010)	Predicted Operations Noise Level	Total Future Operations Noise Level[1]	Incremental Change	Exceed Threshold (Yes/No)

[1]Total Noise Level During Operations = logarithmic addition of Future Without Project + Predicted Operations Noise Level

Table 5.10-19 compares Future Without the Project (without Cat/Del) noise levels with the Future With the Project noise levels at each receptor during the quietest weekday non-delivery hour (between 5:00 PM – 7:00 AM). The greatest incremental change experienced at any of the sensitive receptors would be 0.3 dBA. It was concluded that the contribution of stationary source noise to the total noise generated from normal operations and experienced at identified sensitive receptors during weekday non-delivery hours would not exceed the maximum allowable project-induced increase of 5 dBA threshold used to define significance using established CEQR criteria.

In addition, predicted noise levels generated from normal operations during these hours would not exceed the Town of Mount Pleasant's nighttime noise level limits of 55 dBA for a residential zone.

TABLE 5.10-19. MAXIMUM NOISE LEVELS FROM OPERATIONS AT SENSITIVE RECEPTORS NEAR EASTVIEW SITE DURING WEEKDAY NON-DELIVERY HOURS (Leq, dBA)

Proximate Receptor	Monitoring Period	Future Without Project Noise Level (2010)	Predicted Operations Noise Level	Total Future Operations Noise Level[1]	Incremental Change	Exceed Threshold (Y/N)
EV-S1	3-5 am (Quietest)	52.2	41.4	52.5	0.3	No
	7-9 pm (Noisiest)	58.4	41.4	58.5	0.1	No
EV-S2	3-5 am (Quietest)	53.4	29.4	53.4	0	No
	7-9 pm (Noisiest)	56.0	29.4	56.0	0	No
EV-S3	3-5 am (Quietest)	47.0	28.9	47.1	0.1	No
	7-9 pm (Noisiest)	60.6	28.9	60.6	0	No
EV-S4	3-5 am (Quietest)	51.1	36.1	51.2	0.1	No
	7-9 pm (Noisiest)	58.4	36.1	58.4	0	No

[1]Total Noise Level During Operations = logarithmic addition of Future Without Project + Predicted Operations Noise Level

Table 5.10-20 compares Future Without the Project (without Cat/Del UV Facility) noise levels with the Future With the Project noise levels at each receptor on a Sunday (i.e., not truck deliveries on weekends). The greatest incremental change experienced at any of the sensitive receptors would be 0.3 dBA. It was concluded that the contribution of stationary source noise to the total noise generated from normal operations and experienced at identified sensitive receptors during weekend hours would not exceed the maximum allowable project-induced increase of 5 dBA threshold used to define significance using established CEQR criteria.

In addition, predicted noise levels generated from normal plant operations during these hours would not exceed the Town of Mount Pleasant's daytime noise level limits of 65 dBA for a residential zone.

TABLE 5.10-20. MAXIMUM NOISE LEVELS FROM OPERATIONS AT RECEPTORS NEAR EASTVIEW SITE ON A SUNDAY (Leq, dBA)

Proximate Receptor	Monitoring Period	Future Without Project Noise Level (2010)	Predicted Operations Noise Level	Total Noise Level During Operations [1]	Incremental Change	Exceed Threshold (Yes/No)
EV-S1	3-5 am (Quietest)	52.4	41.4	52.7	0.3	No
	9-10 am (Noisiest)	58.5	41.4	58.6	0.1	No
EV-S2	3-5 am (Quietest)	47.3	29.4	47.4	0.1	No
	9-10 am (Noisiest)	48.4	29.4	48.5	0.1	No
EV-S3	3-5 am (Quietest)	47.0	28.9	47.1	0.1	No
	9-10 am (Noisiest)	51.4	28.9	51.4	0	No
EV-S4	3-5 am (Quietest)	51.2	36.1	51.3	0	No
	9-10 am (Noisiest)	56.0	36.1	56.0	0.1	No

[1]Total Noise Level During Operations = logarithmic addition of Future Without Project + Predicted Operations Noise Level

Combined Mobile and Stationary Source Noise. The medical laboratory, Hammond House, and the juvenile detention center (EV-S1, EV-S3, and EV-S4, respectively) each could be exposed to the combined effect of both mobile and stationary noise generated by the proposed Croton project. The greatest incremental change in stationary source noise for any of the three operations parameters presented above would be 2.6 dBA at Hammond House during weekday truck-delivery hours (7:00 AM – 5:00 PM). Based on the PCE screen presented in Table 5.10-1, the potential incremental change in noise level for the route segment along which the Hammond House is located is less than one decibel. The combined effect of these noise sources due to operations activities would not produce an increase in noise levels that would exceed the 3-5 dBA significance threshold.

5.10.3.1.2. With Cat/Del UV Facility at Eastview Site

Mobile Source Noise. Potential impacts from mobile noise sources resulting from the proposed plant operations with the operating Cat/Del UV Facility in place were assessed. As discussed above, 2010 was selected as the peak year for this analysis. The preliminary PCE screening analysis previously discussed was used to determine whether project-induced traffic would result in a doubling or more of the existing PCEs present along the noise-sensitive route segments identified in the vicinity of the site. In accordance with the provisions outlined in the

CEQR Technical Manual, a doubling of PCEs along a noise study route segment corresponds to an increase of 3 dBA. This increase would prompt a detailed analysis. On the basis of the preliminary PCE analysis for operations with the Cat/Del UV Facility (Table 5.10-3 above), it was determined that none of the identified noise-sensitive route segments would experience a doubling of PCEs. Therefore, it was concluded that the contribution from mobile sources to the total project-generated noise experienced at sensitive receptors would not result in a 3 dBA or more increase in noise levels.

Stationary Source Noise. The Future With the Project (with Cat/Del) noise levels at each of the receptors were established by adding the noise contribution from water treatment plant operations to the Future Without the Project (with the Cat/Del project) noise levels for the analysis year 2010. Potential impacts from noise generated by the equipment used during normal operations at the proposed project site were determined for the sensitive receptors identified near the water treatment plant site. Figure 5.10-2 shows the location of the sensitive receptors.

Since the proposed plant would operate continuously (24 hours a day and 7 days a week), both daytime and nighttime analyses were conducted. To account for the proposed truck delivery hours of 7:00 AM to 5:00 PM on weekdays, the nighttime and weekend analyses excluded operations at the loading and unloading docks. Idling trucks and off-loading activities would represent an additional noise contribution that would not be present during non truck-delivery hours. Therefore, separate noise analyses for project impacts were performed for weekdays during truck delivery hours, for weekdays during non-delivery hours, and for weekends.

Engineering drawings were used to determine the location of each piece of equipment within the plant in order to establish the distance from the equipment to each receptor. Also considered in this analysis was the attenuation that resulted from the thickness and composition of proposed plant walls through which noise from operations would travel. Walls within the proposed plant would serve as noise barriers.

A noise prediction algorithm[6] was used to calculate the noise levels resulting from Croton project operations at each of the receptors. Measured existing noise levels at each of the receptors were logarithmically added to the predicted contribution from the Cat/Del UV Facility operations in order to establish the Future Without the Project (with Cat/Del UV Facility) noise level (see Section 5.10.2.2.2). Croton project operations noise was compared to this Future Without the Project noise level in order to predict potential impacts.

The methods and assumptions made regarding operating times, equipment, and parameters for this analysis that includes the contributions from the Cat/Del UV Facility are the same as those for the analysis that does not consider Cat/Del UV Facility contributions. As was done for the first analysis, three separate possible operating parameters were analyzed as described below:

- The first parameter considered normal operations with the addition of delivery trucks for the hours of 7:00 AM to 5:00 PM on weekdays.

[6] City of New York. October 2001. CEQR Technical Manual.

- The second parameter considered normal operations for weekdays outside anticipated truck delivery hours (i.e. from 5:00 PM to 7:00 AM). The contribution of trucks to the noise level was not included in this parameter.

- The third parameter considered normal operations for weekends. Truck deliveries are not anticipated on weekends. The contribution of trucks to the noise level was not included in this parameter.

Following the calculation of noise levels at sensitive receptors resulting from the proposed plant operations, the contribution from operations was added to the Future Without the Project (with the Cat/Del UV Facility) noise level for the future analysis year (2010) in order to derive the Future With the Project noise levels.

Table 5.10-21 compares Future Without the Project (with the Cat/Del UV Facility) noise levels with the future anticipated operations noise levels at each receptor during the noisiest and quietest weekday truck delivery hours (between 7:00 AM – 5:00 PM). It is anticipated that receptors EV-S3 and EV-S4 would have the highest noise levels of 58.9 dBA from 1:00 – 2:00 PM. The greatest incremental change would be 1.9 dBA at EV-S3. It was concluded, therefore, that the contribution of stationary source noise to the total noise generated from normal operations and experienced at sensitive receptors during weekday truck delivery hours would not exceed the 3-5 dBA threshold used to define significance using established CEQR criteria.

In addition, predicted noise levels generated from normal plant operations during these hours would not exceed the Town of Mount Pleasant's daytime noise level limits of 65 dBA for a residential zone.

Table 5.10-22 compares Future Without the Project (with the Cat/Del UV Facility) noise levels with the Future With the Project noise levels at each receptor during the quietest weekday non-delivery hour (between 5:00 PM – 7:00 AM). The greatest incremental change experienced at any of the sensitive receptors would be 0.3 dBA. It was concluded that the contribution of stationary source noise to the total noise generated from normal operations and experienced at identified sensitive receptors during weekday non-delivery hours would not exceed the maximum allowable project-induced increase of five dBA threshold used to define significance using established CEQR criteria.

In addition, predicted noise levels generated from normal operations during these hours would not exceed the Town of Mount Pleasant's nighttime noise level limits of 55 dBA for a residential zone.

Table 5.10-23 compares Future Without the Project (with Cat/Del UV Facility) noise levels with the Future With the Project noise levels at each receptor on a Sunday (i.e. not truck deliveries on weekends). The greatest incremental change experienced at any of the sensitive receptors would be 0.3 dBA. It was concluded that the contribution of stationary source noise to the total noise generated from normal operations and experienced at identified sensitive receptors during weekend hours would not exceed the maximum allowable project-induced increase of five dBA threshold used to define significance using established CEQR criteria.

In addition, predicted noise levels generated from normal plant operations during these hours would not exceed the Town of Mount Pleasant's daytime noise level limits of 65 dBA for a residential zone.

Combined Mobile and Stationary Source Noise. The medical laboratory (EV-S1), Hammond House (EV-S3), and the juvenile detention center (EV-S4) each could be exposed to the combined effect of both mobile and stationary noise generated by the proposed plant. The greatest incremental change in stationary source noise for any of the three operations scenarios presented above would be 1.9 dBA at Hammond House during weekday truck-delivery hours (7:00 AM – 5:00 PM). Based on the PCE screen presented in Table 5.10-3, the potential incremental change in noise level for the route segment along which the Hammond House is located is less than a decibel. The combined effect of these noise sources due to operations activities would not produce an increase in noise levels that would exceed the 3-5 dBA significance threshold.

TABLE 5.10-21. MAXIMUM NOISE LEVELS FROM OPERATIONS AT SENSITIVE RECEPTORS DURING WEEKDAY TRUCK DELIVERY HOURS (2010) (Leq, dBA)

Monitoring Location	Monitoring Period	Future Without Noise Project Level (with Cat/Del UV Facility)[1]	Predicted Croton Operations Noise Level	Total Noise Level During Operation[2]	Incremental Change[3]	CEQR Threshold[4]	Exceeds Threshold? (Y/N)
EV-S1	2-3 pm (quietest)	53.3	45.6	54.0	0.7	58.2	N
	1-2 pm (noisiest)	57.7	45.6	58.0	0.3	62.6	N
EV-S2	2-3 pm (quietest)	57.7	35.6	57.7	0.0	62.6	N
	1-2 pm (noisiest)	57.9	35.6	57.9	0.0	62.8	N
EV-S3	2-3 pm (quietest)	56.3	53.7	58.2	1.9	61.2	N
	1-2 pm (noisiest)	57.4	53.7	58.9	1.5	62.3	N
EV-S4	2-3 pm (quietest)	56.8	42.9	57.0	0.2	61.7	N
	1-2 pm (noisiest)	58.8	42.9	58.9	0.1	63.7	N

Future Without (with Cat/Del) = logarithmic addition of measured existing and Cat/Del operations (see *Draft EIS for the Catskill/Delaware UV Facility*)
[2]Total Noise Level During Operation = logarithmic addition of Future Without (with Cat/Del) Noise and Croton Operations Noise
[3]Incremental Change is change between Future Without and Total Noise Level During Operation.
[4]CEQR Threshold = Acceptable level above which a significant impact may occur.

TABLE 5.10-22. MAXIMUM NOISE LEVELS FROM OPERATIONS AT SENSITIVE RECEPTORS DURING WEEKDAY TRUCK NON-DELIVERY HOURS (2010) (Leq, dBA)

Monitoring Location	Monitoring Period	Future Without Noise Project Level (with Cat/Del UV Facility)[1]	Predicted Croton Operations Noise Level	Total Noise Level During Operation[2]	Incremental Change[3]	CEQR Threshold[4]	Exceeds Threshold? (Y/N)
EV-S1	3-5 am (quietest)	52.2	41.4	52.5	0.3	57.1	N
	7-9 pm (noisiest)	58.4	41.4	58.5	0.1	63.3	N
EV-S2	3-5 am (quietest)	53.4	29.4	53.4	0	58.3	N
	7-9 pm (noisiest)	56.6	29.4	56.6	0	61.5	N
EV-S3	3-5 am (quietest)	47.1	28.9	47.2	0.1	52.0	N
	7-9 pm (noisiest)	60.6	28.9	60.6	0	65.5	N
EV-S4	3-5 am (quietest)	51.1	36.1	51.2	0.1	56.0	N
	7-9 pm (noisiest)	58.7	36.1	58.7	0	63.6	N

[1] Future Without (with Cat/Del) = logarithmic addition of measured existing and Cat/Del operations (see *Draft EIS for the Catskill/Delaware UV Facility*)
[2]Total Noise Level During Operation = logarithmic addition of Future Without (with Cat/Del) Noise and Croton Operations Noise
[3]Incremental Change is change between Future Without and Total Noise Level During Operation.
[4]CEQR Threshold = Acceptable level above which a significant impact may occur.

TABLE 5.10-23. MAXIMUM NOISE LEVELS FROM OPERATIONS AT SENSITIVE RECEPTORS DURING WEEKENDS (SUNDAY) (2010) (Leq, dBA)

Monitoring Location	Monitoring Period	Future Without Noise Project Level (with Cat/Del UV Facility)[1]	Predicted Croton Operations Noise Level	Total Noise Level During Operation[2]	Incremental Change[3]	CEQR Threshold[4]	Exceeds Threshold? (Y/N)
EV-S1	3-5 am (quietest)	52.4	41.4	52.7	0.3	57.3	N
	9-10 am (noisiest)	58.5	41.4	58.6	0.1	63.4	N
EV-S2	3-5 am (quietest)	47.3	29.4	47.4	0.1	52.2	N
	9-10 am (noisiest)	48.4	29.4	48.5	0.1	53.3	N
EV-S3	3-5 am (quietest)	47.1	28.9	47.2	0.1	52.0	N
	9-10 am (noisiest)	51.4	28.9	51.4	0	56.3	N
EV-S4	3-5 am (quietest)	51.2	36.1	51.3	0.1	56.1	N
	9-10 am (noisiest)	56.0	36.1	56.0	0	60.9	N

[1]Future Without (with Cat/Del) = logarithmic addition of measured existing and Cat/Del operations (see *Draft EIS for the Catskill/Delaware UV Facility*)
[2]Total Noise Level During Operation = logarithmic addition of Future Without (with Cat/Del) Noise and Croton Operations Noise
[3]Incremental Change is change between Future Without (with Cat/Del) and Total Noise Level During Operation.
[4]CEQR Threshold = Acceptable level above which a significant impact may occur.

5.10.3.2. Potential Construction Impacts

Potential noise impacts due to construction activities were analyzed for mobile and stationary source sensitive receptors in the vicinity of the site. Peak construction noise levels were compared to noise levels for the Future Without the Project year. The anticipated peak year for mobile source noise during construction is 2006 (see footnote on page 15).

The anticipated peak year for stationary source noise during construction is 2005 (see footnote on page 10). Construction activities at the proposed project site are scheduled to take place between September 2005 and September 2010. Anticipated construction hours would be between 7:00 AM and 6:00 PM on weekdays.

The proposed water treatment plant site falls within the jurisdiction of the Town of Mount Pleasant. Table 5.10-24 presents noise standards governing construction activity in the Town of Mount Pleasant.

TABLE 5.10-24. NOISE LIMITS[1] FOR CONSTRUCTION ACTIVITY IN THE TOWN OF MOUNT PLEASANT[2] (L_{10}, dBA)

Daytime (8:00 am – 6:00 pm)		Nighttime (6:00 pm – 8:00 am)	
Residential Zones	**Commercial Zones**	**Residential Zones**	**Commercial Zones**
70	75	55	80

[1]Noise levels as measured from 400 feet from construction site.
[2]Source: Code of the Town of Mount Pleasant, New York, Part II, Chapter 139 (Noise), Article IV

The proposed Eastview Site lies within a "Public Utility/Office Building" (OB-2) zoning district. Receptors surrounding the site are in areas zoned as residential (R-20 and R-40). As stated in the Code of the Town of Mount Pleasant, noise levels from a construction site shall not exceed the noise limits presented above. In addition to the absolute limits presented above, the Town of Mount Pleasant prohibits construction activity between the hours of 9:00 PM and 7:00 AM on weekdays. Standards to determine significant adverse impacts as established by the *CEQR Technical Manual* also were used to evaluate any impacts to this site because those guidelines are more restrictive than the noise limits enforced by the Town of Mount Pleasant. Applicable standards relating to single-family residences were applied to the area surrounding the water treatment plant site, which is zoned as single family residential. According to the *CEQR Technical Manual*, a project-generated increase of 5 dBA or more over the baseline noise level recorded at a sensitive receptor during the daytime is considered a significant impact if the existing noise level is less than 60 dBA. If the existing noise level is 62 dBA, a 3 dBA or more incremental change constitutes a significant impact. A more restrictive (3 dBA incremental threshold) applies during the nighttime.[7]

[7] City of New York. October 2001. CEQR Technical Manual.

5.10.3.2.1. Without Cat/Del UV Facility at Eastview Site

Mobile Source Noise. Potential impacts from project-related mobile sources used during the construction phase of the proposed project were determined for the analysis year (2006) at noise-sensitive route segments in the vicinity of the water treatment plant site. As previously discussed, on the basis of the PCE screening analysis, it was determined that none of the identified noise-sensitive route segments in the vicinity of the water treatment plant site would experience a 3 dBA or more incremental change in noise levels due to mobile source construction activities. Therefore, it was concluded that the contribution from mobile source noise to the total construction-related noise would not result in noise levels exceeding the 3-5 dBA threshold.

Stationary Source Noise. Potential noise impacts resulting from the use of on-site equipment during construction activities were determined for the receptors proximate to the water treatment plant site. 2005 was used as the analysis year as it represented the month with the maximum construction-related noise levels. The maximum projected monthly noise level from construction activities was added to the Future Without the Project value in order to determine the noise impacts for the worst-case scenario. Analysis of potential construction-induced noise took into account the variability of noise emissions over the course of the construction due to changing construction conditions. Noise levels from construction related equipment would vary over the course of the construction schedule. Construction equipment use would be intermittent and variable during a normal workday. In addition, the location of equipment would vary during the day as equipment would move between areas on the site. Finally, the precise equipment tally would vary from period to period as the phases of construction change over the entirety of the project.

A noise prediction algorithm[8] (that considered equipment noise levels, usage factors, and distances from source to receptor discussed above) was used to calculate the average noise level at a proximate receptor for a typical hour for each month of construction. The algorithm is presented and discussed in greater detail in Section 4.10, Data Collection and Impact Methodologies, Noise Analysis.

A monthly breakdown of anticipated equipment for the duration of the project was obtained from engineering construction plans. Relevant equipment noise levels for construction equipment were determined from industry and governmental publications. Usage factors were used to account for the fact that construction equipment use is intermittent throughout the course of a normal workday. A random-number generator was employed to account for equipment location being variable. Certain pieces of equipment that only would be used within the footprint of the proposed plant (e.g., rock drills) were restricted to this area on the site. The remaining construction equipment was randomly placed over the entire site. In this manner, horizontal and vertical distances from construction equipment to the receptors being studied were established for each month in order to calculate the line-of-sight distance between the noise source and the sensitive receptor. Table 5.10-25 presents construction equipment, including associated noise levels and usage factors, anticipated for use over the course of construction at the water treatment

[8] City of New York. October 2001. CEQR Technical Manual.

plant site. The rock drill is anticipated to be the noisiest piece of equipment, and is estimated to have a noise level of 98 dBA at a distance of 50 feet. Equipment noise levels (at their associated reference distances) and the usage factors are standard values established through noise studies. The reference for this study is provided at the bottom of the table.

TABLE 5.10-25. NOISE LEVELS AND USAGE FACTORS FOR CONSTRUCTION EQUIPMENT USED AT EASTVIEW SITE [1]

Equipment	Equipment Noise Level (dBA)	Reference Distance (feet)	Usage Factor				
			Clearing	Excavation	Foundation	Erection	Finishing
Grader	85	50	0.05				0.02
Asphaltic Paver	90	50	[3]				0.12
Aggregate Spreader[2]	89	50					0.12
Roller	74	50					0.1
Crane 100-Ton Hydraulic	83	50				0.08	0.04
Crane 250-Ton Hydraulic	88	50				0.04	0.02
Crane 50-Ton Hydraulic	83	50				0.08	0.04
Crane 70-Ton Hydraulic	83	50				0.08	0.04
Crane 90-Ton Hydraulic	83	50				0.08	0.04
Wood Chipper[2]	93	30	0.05				
Backhoe	85	50	0.04	0.16			0.04
Loader	84	50	0.16	0.16			0.04
Dump Truck[4]	80	50	0.16	0.16			0.16
Compactor-Vibratory	81	50			0.4	0.16	0.16
Fence Post Hole Digger[2]	82	50	0.05				
Concrete Floor Finisher	70	50			0.4	0.1	0.4
Pick-up Truck	75	50	0.16	0.16			0.16
Concrete Vibrator[2]	76	50			0.4	0.16	0.16
Welding Machine[2]	70	50				0.4	
Air Compressor- 600 C	81	50		1.0	0.4	0.4	0.4
Rock Drill	98	50		0.04			0.05
Rock Crusher[2]	93	50		0.04			0.05

[1] Bolt, Beranek, and Newman, Inc. December 1971. Noise from Construction Equipment and Operations, Buildings Equipment and Home Appliances.

[2] No usage factors available. Usage factors from similar equipment were applied

[3] Blanks indicate no or very rare usage.

[4] Bolt, Beranek, and Newman, Inc. December 1971 Noise from Construction Equipment and Operations, Buildings Equipment and Home Appliances with attenuation for exhaust mufflers applied.

Figures 5.10-3 through 5.10-6 present monthly total noise levels during construction activities (as calculated by the noise prediction algorithm) at each identified sensitive receptor for the full duration of the construction phase. Noise level reductions were factored into the noise prediction algorithm to account for equipment that would be in the excavation. The walls of the excavation

would provide sound attenuation to equipment in the excavated area. As excavation and rock removal activities take place, the excavation would vary in depth from ground level to approximately 25 feet below grade. Only equipment that would be in the excavation at all times (i.e., rock drills) had noise reductions applied to them. A noise reduction of between 5 dBA and 15 dBA was factored for the rock drills depending on the depth of the excavation at any given time of construction activities.

Following the calculation of monthly noise levels during construction activities, an analysis was performed for the anticipated peak noise month during construction (2005). The analysis determined whether construction would result in noise increasing to levels that exceed the 3-5 dBA threshold for this worst-case scenario. The maximum projected noise level from the peak month at each receptor from construction activities was added to the future baseline value in order to predict the greatest noise level changes. Potential noise impacts were assessed only for weekdays during construction hours (7:00 AM- 6:00 PM) since no construction-related noise was anticipated outside of these hours.

Medical Laboratory (EV-S1). Noise levels predicted to occur as a result of the proposed project at the medical laboratory (EV-S1) would exceed the 3-5 dBA threshold used to define significance. The largest incremental change over the CEQR threshold at this receptor (located immediately to the north of the proposed site) over the Future Without the Project level would be 19.8 dBA. Predicted noise levels would exceed the acceptable threshold for the duration of construction activities at this receptor. The period with the greatest incremental change is from November 2005 until July 2006. This period corresponds to rock drilling and excavation activities on the site. The remainder of the construction period would also produce noise levels exceeding the 3-5 dBA threshold. The incremental change for this remaining period would fluctuate between approximately 1 dBA and 11 dBA above the threshold used to define significance. While this construction-related noise level increase would be considered an adverse impact, the laboratory is not considered a sensitive receptor, in accordance with CEQR guidelines, since the facility is not ordinarily utilized by the general public and is not one of the following uses that are categorized by CEQR as sensitive receptors: residences, health care facilities, school, libraries, and parks. It should also be noted that the users of the laboratory would be within the facility, which is fully enclosed with single-glazed windows that typically provide at least 20dBA attenuation from outdoor noise levels. Therefore, it is anticipated that the noise levels actually experienced by users of the laboratory would be within acceptable levels within the structure.

FIGURE 5.10-3. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT MONITORING LOCATION EV-S1 (WITHOUT MITIGATION) (Leq, dBA)

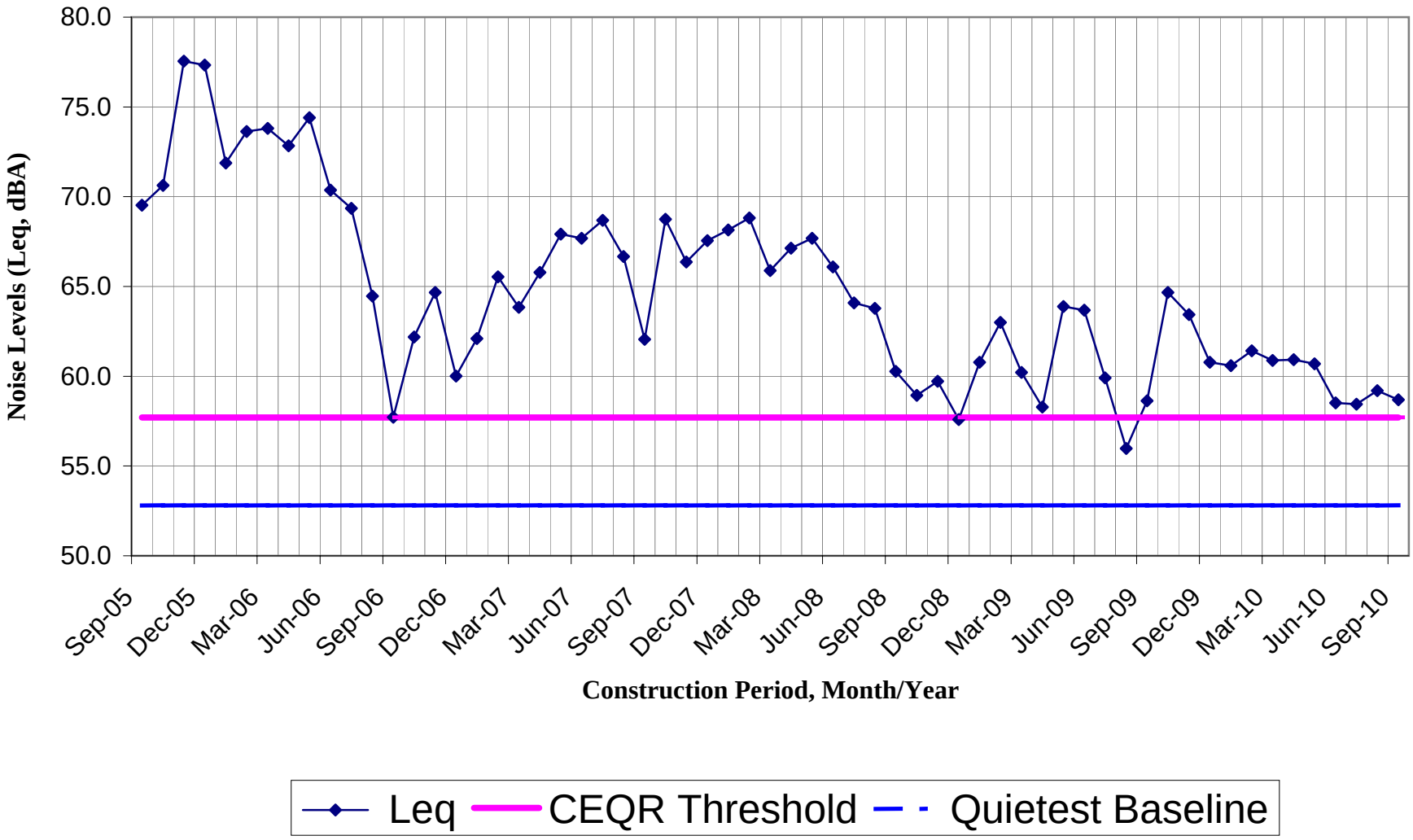


FIGURE 5.10-4. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT MONITORING LOCATION EV-S2 (WITHOUT MITIGATION) (Leq, dBA)

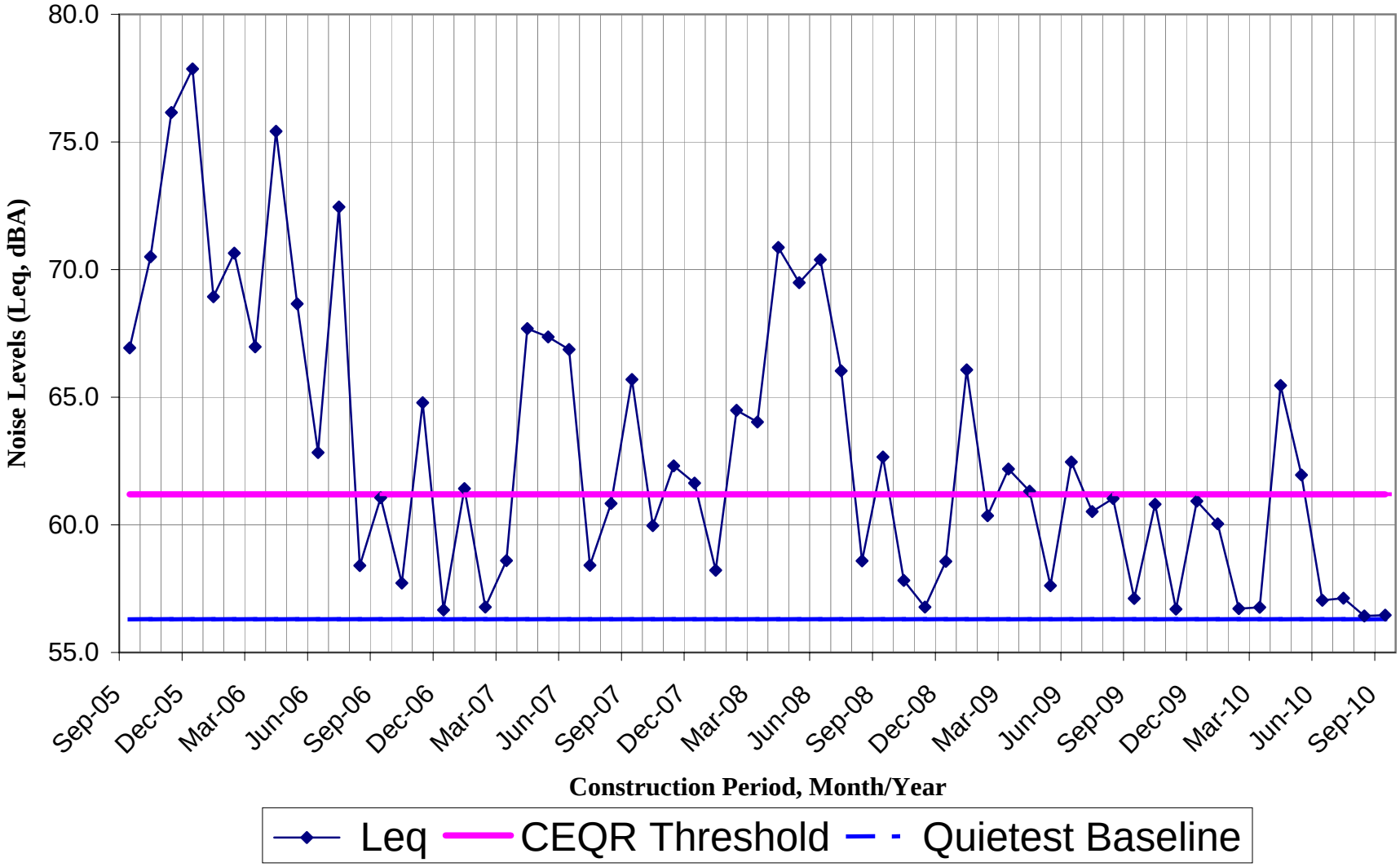


FIGURE 5.10-5. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT MONITORING LOCATION EV-S3 (WITHOUT MITIGATION) (Leq, dBA)

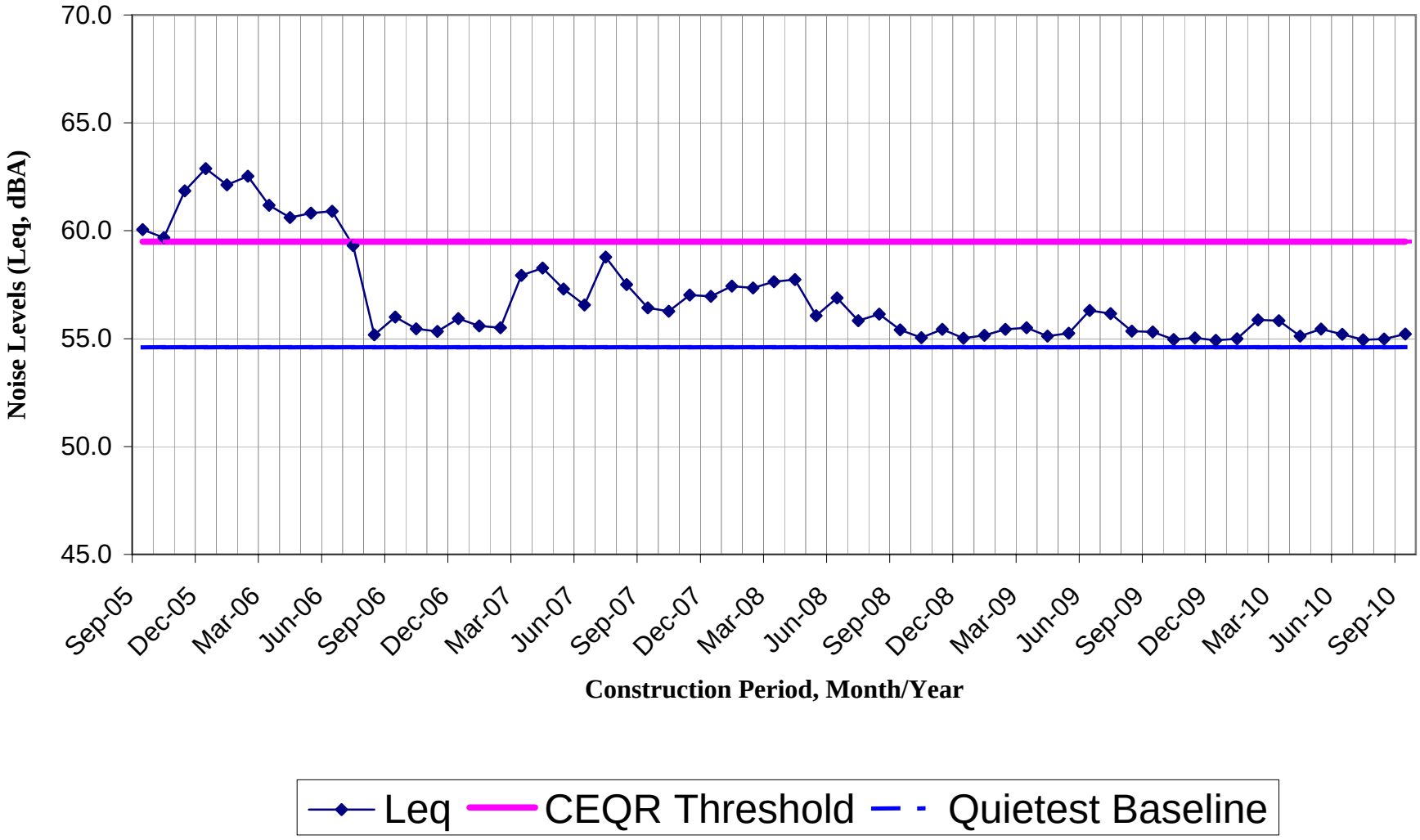
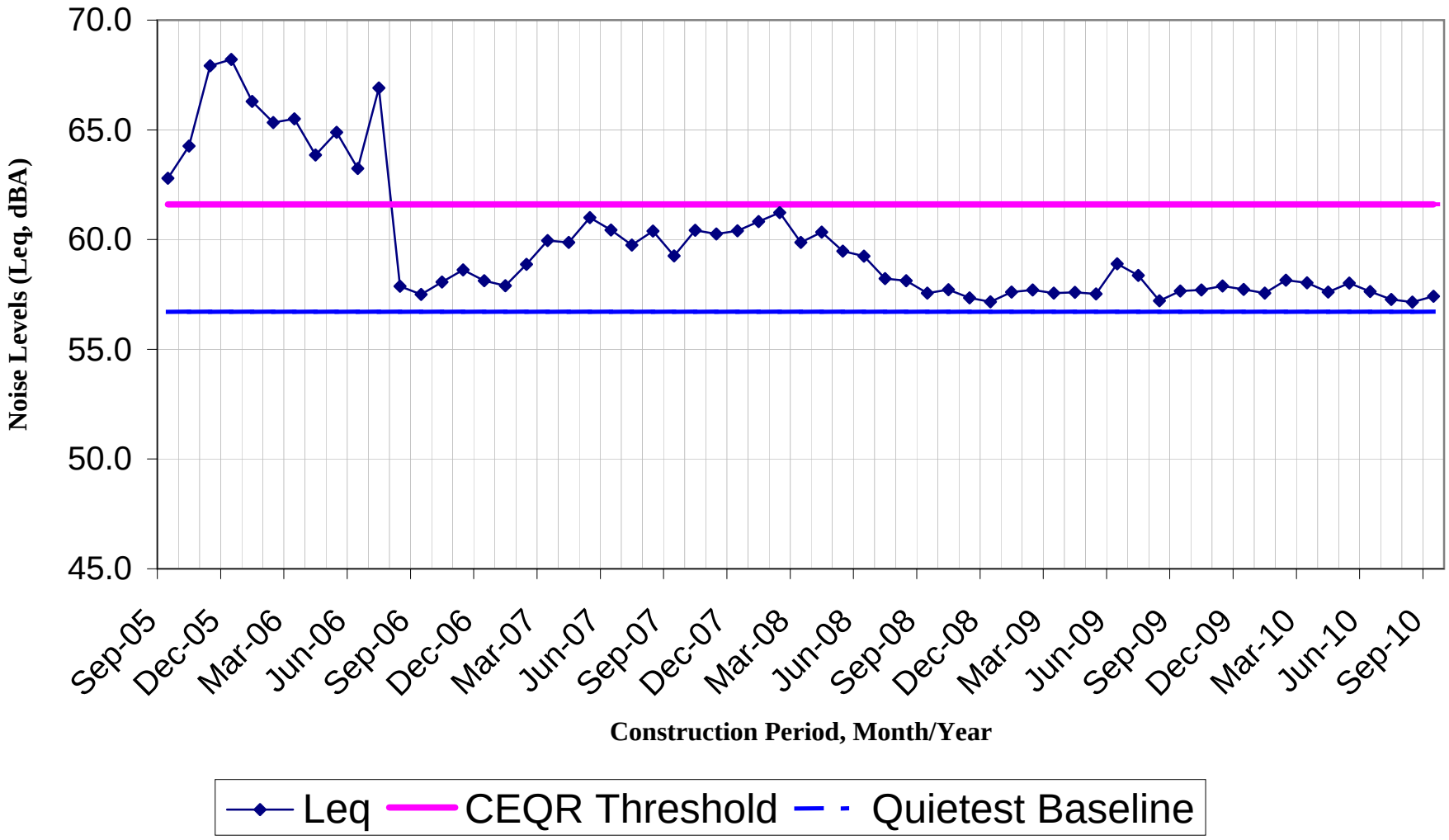


FIGURE 5.10-6. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT MONITORING LOCATION EV-S4 (WITHOUT MITIGATION) (Leq, dBA)



An analysis was performed to determine the total distance beyond the laboratory (and further to the north) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that these unacceptable noise level increases would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend from the north end of the site to a maximum distance of approximately 3,500 feet to the north of the laboratory. This area to the north is the Grasslands Reservation, which includes the Westchester Medical Center, (see Figure 5.10-7). Section 9.1.4 discusses attenuation strategies.

Westchester County Penitentiary (EV-S2). Noise levels predicted to occur as a result of the proposed project at the penitentiary (EV-S2) would exceed the 3-5 dBA threshold used to define significance. The largest incremental change at this receptor (located to the east of the Delaware Aqueduct Shaft No. 19) over the Future Without the Project level would be 16.6 dBA over the CEQR threshold. Predicted noise levels would exceed the acceptable threshold sporadically over the course of construction activities at this receptor. The period with the greatest incremental change is from November 2005 until July 2006. This period corresponds to rock drilling and excavation activities on the construction site. The remainder of the construction period would also produce noise levels that sporadically exceed the 3-5 dBA threshold. The incremental change for this remaining period would fluctuate between approximately 1 dBA and 11 dBA above the threshold used to define significance. While this construction-related noise level increase would be considered an adverse impact, the penitentiary is not considered a sensitive receptor, in accordance with CEQR guidelines, since the facility is not ordinarily utilized by the general public and is not one of the following uses that are categorized by CEQR as sensitive receptors: residences, health care facilities, school, libraries, and parks. It should also be noted that the users of the penitentiary would be within the facility, which is fully enclosed with single-glazed windows that typically provide at least 20dBA attenuation from outdoor noise levels. Therefore, it is anticipated that the noise levels actually experienced by users of the penitentiary would be within acceptable levels within the structure.

An analysis was performed to determine the total distance beyond the penitentiary (and further to the east) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that these noise levels would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend from the east end of the site to a maximum distance of approximately 1,175 feet to the east of the penitentiary for a period from approximately September 2005 until July 2006. This area to the east is still within the grounds of the penitentiary. No significant adverse impacts are predicted as a result of the temporary nature of the construction activities (see Figure 5.10-7). Section 9.1.4 discusses attenuation strategies.

Hammond House (EV-S3). Noise levels predicted to occur as a result of the proposed project at Hammond House (Receptor EV-S3) would exceed the 3 - 5 dBA threshold used to define significance. The largest incremental change at this receptor (located to the south of the proposed site) over the Future Without the Project level would be 3.4 dBA over the CEQR threshold. Predicted noise levels would exceed the acceptable threshold sporadically from approximately September 2005 until June 2006. However, due to the short duration of these

construction-related noise level increases, these noise level increases would be considered temporary and not significant.

An analysis was performed to determine the total distance beyond Hammond House (and further to the south) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that the noise levels would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend from the south of the site to a maximum distance of approximately 775 feet to the south of Hammond House. This area is owned by the NYCDEP and does not contain noise-sensitive receptors (see Figure 5.10-7).

Juvenile Detention Center (EV-S4). Noise levels predicted to occur as a result of the proposed project at the juvenile detention center (Receptor EV-S4) would exceed the 3-5 dBA threshold used to define significance. The largest incremental change at this receptor (located to the south of the proposed site) over the Future Without the Project level would be 6.6 dBA over the CEQR threshold. Predicted noise levels would exceed the acceptable threshold sporadically from approximately September 2005 until July 2006. However, due to the short duration of these construction-related noise level increases, these noise level increases would be considered temporary and not significant.

An analysis was performed to determine the total distance (beyond the detention center and further to the north) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that the increased noise levels would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend to a maximum distance of approximately 1,150 feet to the north of the juvenile detention center. This area to the north is the Grasslands Reservation, which includes the Westchester Medical Center (see Figure 5.10-7).

Table 5.10-26 presents maximum construction noise level data for the peak construction-noise year (2005).

TABLE 5.10-26. MAXIMUM NOISE LEVELS FROM CONSTRUCTION ACTIVITIES AT RECEPTORS NEAR EASTVIEW SITE WITHOUT ATTENUATION (Leq, dBA) (2005 ANALYSIS YEAR)

Proximate Receptor	Monitor Period	Future Without Project Noise Level[1]	Predicted Construction Noise Level[2]	Total Noise Level During Construction[3]	Incremental Change[4]	CEQR Threshold[5]	Reduction Required to Reach Goal[6]	Exceed CEQR Threshold? (Y/N)
EV-S1	Quietest (2-3 pm)	52.8	77.5	77.5	24.7	57.7	19.8	Yes
	Noisiest (1-2 pm)	57.5	77.5	77.5	20.0	62.4	15.1	Yes
EV-S2	Quietest (2-3 pm)	56.3	77.8	77.8	21.5	61.2	16.6	Yes
	Noisiest (1-2 pm)	56.6	77.8	77.8	21.2	61.5	16.3	Yes
EV-S3	Quietest (2-3 pm)	54.6	62.2	62.9	8.3	59.5	3.4	Yes
	Noisiest (1-2 pm)	56.2	62.2	63.2	7.0	61.1	2.1	Yes
EV-S4	Quietest (2-3 pm)	56.7	67.9	68.2	11.5	61.6	6.6	Yes
	Noisiest (1-2 pm)	58.7	67.9	68.4	9.7	63.6	4.8	Yes

[1]Future Without Project Noise = measured existing

[2]Predicted Construction Noise from on-site construction equipment as experienced at receptors.

[3]Total Noise Level During Construction = logarithmic addition of Future Without the Project Noise Level and Predicted Construction Noise Level

[4]Incremental Change = Total Noise Level minus the Future Without the Project Noise Level.

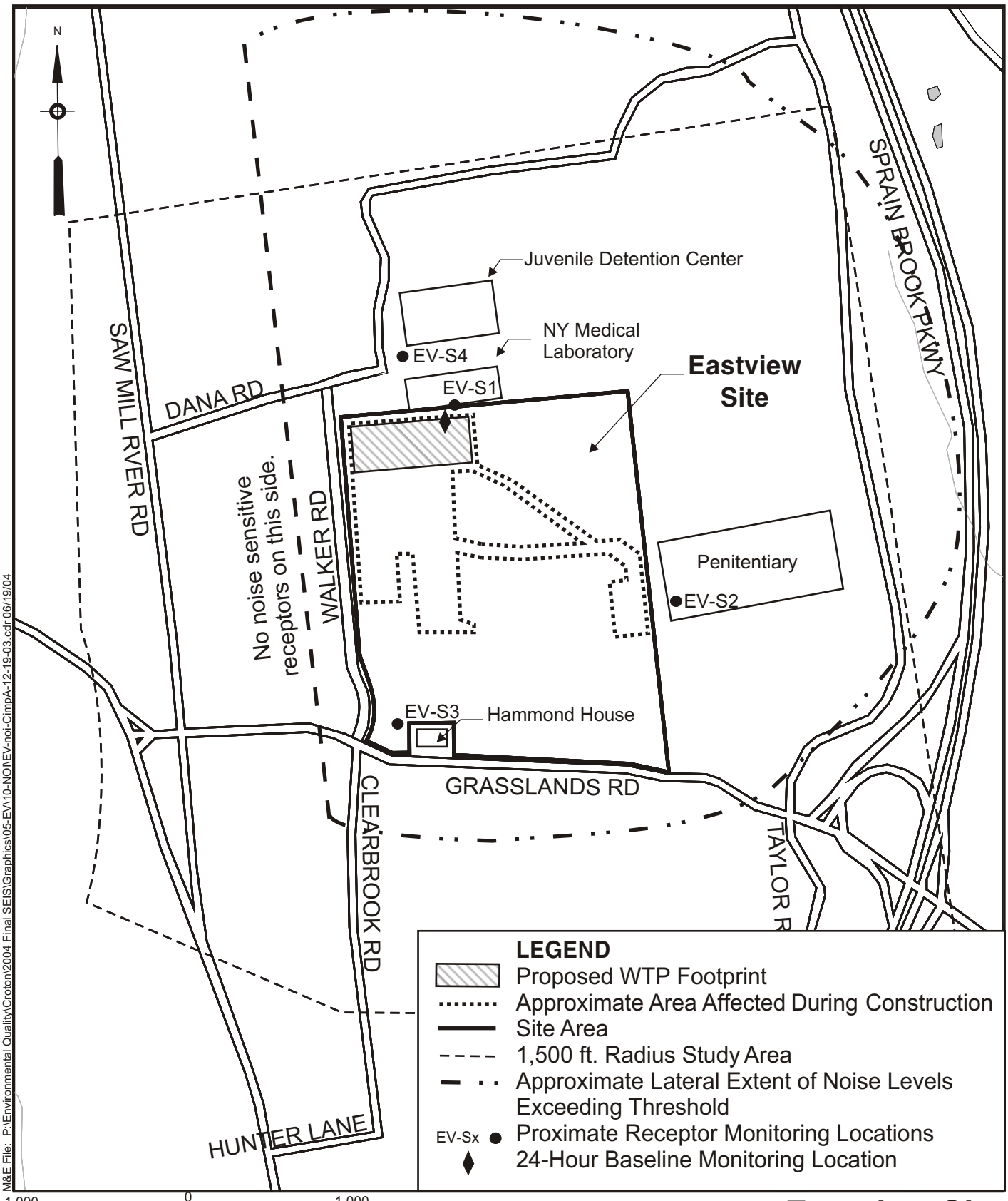
[5]CEQR Threshold: The maximum allowable noise level = Future Without the Project plus maximum allowable decibels according to CEQR 3-5 dBA rule:

<60 dBA, 5 dBA increase acceptable

60-61 dBA, >=4 dBA increase acceptable

>61 dBA, >=3 dBA increase unacceptable

[6]Reduction Required to Reach Goal: The reduction needed to bring Total Noise Level below the CEQR threshold.



Eastview Site
Lateral Extent of Noise Levels Exceeding Threshold (Without Cat/Del - Before Mitigation)

Croton Water Treatment Plant

Figure 5.10-7

The Town of Mount Pleasant Noise Code states that construction-generated noise in an area zoned for residential uses may not exceed an L_{10} of 70 dBA between the hours of 8:00 AM and 6:00 PM when measured at 400 feet from the construction limit. A more prohibitive L_{10} limit of 55 dBA applies from 6:00 PM to 8:00 AM. Because the Town of Mount Pleasant Noise Code uses L_{10} values, a comparison of Leq and L_{10} values was performed. Table 5.10-27 presents a comparison of measured L_{eq} and L_{10} values for the existing condition. The comparison indicates that there is very little difference in baseline L_{eq} and L_{10} values at this location. This can be explained by the fact that there was very little fluctuation observed in noise levels over the course of any given measurement period at the Eastview Site.

TABLE 5.10-27. COMPARISON OF MEASURED Leq AND L_{10}

Proximate Receptor	Monitoring Period	Leq	L_{10}	Incremental Change
EV-S1	Quietest (2-3 pm)	52.8	53.4	0.6
	Noisiest (1-2 pm)	57.5	56.2	-1.3
EV-S2	Quietest (2-3 pm)	56.3	57.6	1.3
	Noisiest (1-2 pm)	56.6	57.2	0.3
EV-S3	Quietest (2-3 pm)	54.6	57.2	2.6
	Noisiest (1-2 pm)	56.2	56.0	-0.2
EV-S4	Quietest (2-3 pm)	56.7	58.0	1.3
	Noisiest (1-2 pm)	58.7	60.2	1.5

Table 5.10-28 presents a comparison of predicted construction noise levels (L_{10}) at 400 feet from the construction limit to noise limits as prescribed by the Mount Pleasant Noise Code. In the absence of attenuation measures, predicted noise levels would violate the Mount Pleasant Noise Code, particularly for the hours between 7:00 AM and 8:00 AM when the reduced noise limits applies. As opposed to the noise limits prescribed in the *CEQR Technical Manual*, Mount Pleasant noise limits are absolute limits over which noise may not occur.

The Town of Mount Pleasant Noise Code can be effectively complied with through the use of noise attenuation measures. Measures that could be utilized include stationary and portable barriers, advanced equipment mufflers, or staggering usage of equipment. Relevant guidelines and noise limits of the code will be in the detailed specifications to which the contractor will be obligated to comply. The precise attenuation methods employed by the contractor to adhere to acceptable levels would be left to their discretion subject to NYCDEP review and approval. Section 9.1.4 discusses possible attenuation strategies.

TABLE 5.10-28. MAXIMUM NOISE LEVELS FROM CONSTRUCTION ACTIVITIES (2005) AT 400 FEET FROM EASTVIEW SITE WITHOUT ATTENUATION COMPARED TO MOUNT PLEASANT CODE (L_{10}, dBA)

Construction Limit	Monitoring Period	Total Noise Level During Construction[1]	Mount Pleasant Code[2]	Code Compliance? (Y/N)
North	Noisiest (1-2 pm)	72.2	70	N
	7-8 am	72.5	55	N
South[3]	Noisiest (1-2 pm)	65.4	70	Y
	7-8 am	65.4	55	N
East	Noisiest (1-2 pm)	67.4	70	Y
	7-8 am	67.1	55	N
West	Noisiest (1-2 pm)	70.9	70	N
	7-8 am	71.3	55	N

[1]Total Noise Level During Construction based on logarithmic addition of Future Without Project and Predicted L_{10} Construction Noise Level.
[2]Maximum allowable L_{10} noise levels based on land use.
[3] NYCDEP property extends greater than 400 feet to the south of the construction site. These values are at the closest public access the Hammond House, which to the south of the site.

Combined Mobile and Stationary Source Noise. The medical laboratory, (EV-S1), the juvenile detention center (EV-S3), and Hammond House (EV-S4) each could be exposed to the combined effect of both mobile and stationary noise generated by construction activities at the proposed water treatment plant. The greatest incremental change from mobile sources is predicted to occur in 2006 and the greatest incremental change from stationary sources is predicted to occur in 2005. Although these years are different, the two peak years were combined in order to predict the worst-case scenario. This is the most conservative approach and could over-estimate combined noise levels. Based on the PCE screen presented in Table 5.10-2, the potential incremental change in mobile source noise levels due to construction activities for the route segments along which these sensitive receptors are located is less than half a decibel. Receptors at this site already would have noise level increases in excess of the CEQR impact threshold used to determine significance due to contributions from stationary source noise. The contribution from mobile sources to the total noise would not appreciably change predicted noise levels. Section 9.1, Mitigation of Potential Impacts, presents a discussion of possible attenuation measures.

5.10.3.2.2. Vibration from Construction

Due to the magnitude of this project, it is possible that excavation activities may cause vibrations. Vibrations could occur due to rock blasting activities and from tunnel boring machine (TBMs). The foundation and the shafts of the proposed plant would require rock

drilling and blasting. The raw water tunnel (and treated water tunnel, if built as part of the NCA-pressurization alternative) would be completed with TBMs. There are laboratories associated with the hospital located to the north of the site that are potentially sensitive to vibrations.

Rock Blasting. Blasting is a method of removing large quantities of rock. Modern blasting techniques incorporate delay blasting, which consists of reducing a single blast to a series of smaller blasts through the use of millisecond delays. As an example, if a total charge (W) is detonated using five delays, the effective vibration-generating charge is only one-fifth of W, but the demolition effect is the same as the total charge W fired instantaneously. This technique is an effective vibration control method. Blasting is conducted underground within the bedrock (a major noise attenuating material in itself).

Prior to the commencement of a blasting program, a pre-blast survey and test blasting would be conducted at the site identified for rock removal. This exercise would establish actual site conditions as they relate to the rock blasting and would aide the blasting contractor in having an appropriate blast design. The blast design would consider such factors as rock type, rock fracturing, spacing of charges, topography, type of explosives, etc. It is in this manner that potential impacts of blasting would be kept within acceptable limits.

There are four key potential impacts from blasting. Proper pre-blast testing and blast design would mitigate each of these issues:

- Fly rock. Fly rock is controlled through proper blast design (which in turn is a result of pre-blast surveying and test blasting) and the use of blast mats. Blast mats are thick mats (metal or metal-reinforced rubber) that are placed directly on top of the rock body to be blasted. A blast safety zone area also would be established. The actual extent of this area would be established by the blasting contractor on the basis of the pre-blast survey and test blasting. As an extra precaution, it is common practice to stop traffic traveling on roads in the immediate vicinity of the blast for the few seconds that the blast is detonated. Potentially affected roads would include Dana Road and Walker Road.

- Ground Vibration. Ground vibration is controlled with proper blast design. Maximum acceptable vibration is strictly controlled so as to avoid any potential damage to nearby structures.

- Air Blast. Air blast is usually caused by poor blast design resulting in uncovered surface detonation. It can be a cause of complaints but is unlikely to cause physical damage. Under normal conditions, noise generated by a blast is analogous to a distant rumble of thunder: it may be noticeable to the individual but would not itself be a major source of noise. On a large construction site, equipment such compressors and rock drilling would constitute the largest sources of noise. These sources would occur with regularity over the course of a workday whereas blasting would last a few seconds for two to three times a day. The instantaneous noise level itself would be attenuated due to the fact that the charges would be detonated within the rock mass, which is an effective noise attenuator.

- Dust. Dust would be suppressed with the use of blast mats. Blasting contractors also frequently spray water on the hauling roads to prevent dust.

Rock excavation at the Eastview Site is currently scheduled to extend from approximately November 2005 until June 2006. During this phase of construction, there would be at least two blasting events on a designated day (one or two in the morning and the rest in the afternoon) followed by several days of mucking out (removing rock debris from the excavation).

The potential areas of concern listed above each can be effectively controlled so as to produce no demonstrable public disturbance through the use of proper blast design. A certified blasting contractor would be engaged by the construction manager. There are strict industry standards that govern and limit acceptable noise and vibration resulting from blasting. These limits are a part of the contract specifications to which the blasting contractor will be obligated to adhere. These guidelines also are included in the detailed specifications and must be adhered to by the blasting contractor. The Town of Mount Pleasant has blasting ordinances that would apply to the proposed facility. [9] In Mount Pleasant, blasting is permitted after 8 AM and before 7 PM on weekdays and Saturdays, subject to conditions set by the Town's Building Inspector.

Facilities identified as sensitive receptors would be notified prior to the commencement of blasting. All complaints received would be investigated thoroughly.

Tunnel Boring Machines. Vibrations from advancing TBMs may affect sensitive electronic equipment. The tunneling subcontractor would develop a vibrations monitoring program during the engineering phase of the project. Prior to any boring activities, the location of the bore path would be reviewed to identify any businesses, hospitals, residences, or other facilities located in the vicinity of the planned boring. Soil conditions, structural conditions of neighboring buildings, and sensitive uses would be identified. Although TBMs have been used on a number of projects within the City of New York and vibration has seldom caused any impacts during these operations, any potential impacts on people or property due to vibration would be addressed for the proposed project. The impact of the vibrations would be reduced to levels permitted by applicable local, state, and federal regulations and codes.

5.10.3.2.3. With Cat/Del UV Facility at Eastview Site

Mobile Source Noise. Potential impacts from mobile noise sources resulting from the proposed Croton project and Cat/Del UV Facility construction were assessed. As discussed above, 2006 was selected as the peak year for this analysis. The preliminary PCE screening analysis previously discussed was used to determine whether project-induced traffic would result in a doubling or more of the existing PCEs present along the noise-sensitive route segments identified in the vicinity of the site. In accordance with the provisions outlined in the *CEQR Technical Manual*, a doubling of PCEs along a noise study route segment corresponds to an increase of three dBA. This increase would prompt a detailed analysis. On the basis of the preliminary PCE analysis for the proposed Croton project and Cat/Del UV Facility construction (Tables 5.10-4 through 5.10-7 above), it was determined that none of the identified noise-sensitive route segments would experience a doubling of PCEs. Therefore, it was concluded that

[9] Code of the Town of Mount Pleasant, Part II, General Legislation, Chapter 104, Fire Prevention, Article IV, Explosives, Ammunition, and Blasting Agents.

the contribution from mobile sources to the total project-generated noise experienced at sensitive receptors would not result in a 3 dBA or more increase in noise levels.

Stationary Source Noise. The future construction noise levels at each of the receptors were predicted by adding the noise contribution from water treatment plant construction to the Future Without the Project (with the Cat/Del UV Facility) noise levels for the peak construction year (2005) (see Section 5.10.2.2.2). Potential impacts from noise generated by construction activities thereby were determined for the sensitive receptors identified near the water treatment plant site. Figure 5.10-2 shows the location of the sensitive receptors.

A noise prediction algorithm[10] (that considered equipment noise levels, usage factors, and distances from source to receptor discussed above) was used to calculate the average noise level at a proximate receptor for a typical hour for each month of construction. The algorithm is presented and discussed in greater detail in Section 4.10, Data Collection and Impact Methodologies, Noise Analysis. The methods and assumptions made regarding the use of on-site equipment during construction activities for this analysis were the same as those for the analysis that did not include the contribution from the Cat/Del UV Facility.

Following the calculation of monthly noise levels during construction activities, an analysis was performed for the anticipated peak noise month during construction (2005). The analysis predicted whether construction would result in noise increasing to levels that exceed the 3 to 5 dBA threshold. The maximum projected noise level from the peak month at each receptor from construction activities was added to the Future Without the Project (with the Cat/Del UV Facility) noise level. Potential noise impacts were assessed only for weekdays during construction hours (7:00 AM to 6:00 PM). Figures 5.10-8 through 5.10-11 present monthly total noise levels during construction activities (as calculated by the noise prediction algorithm) at each identified sensitive receptor for the full duration of the construction phase.

[10] City of New York. October 2001. CEQR Technical Manual.

FIGURE 5.10-8. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT EV-S1 WITH UV FACILITY BASELINE (WITHOUT MITIGATION) (Leq, dBA)

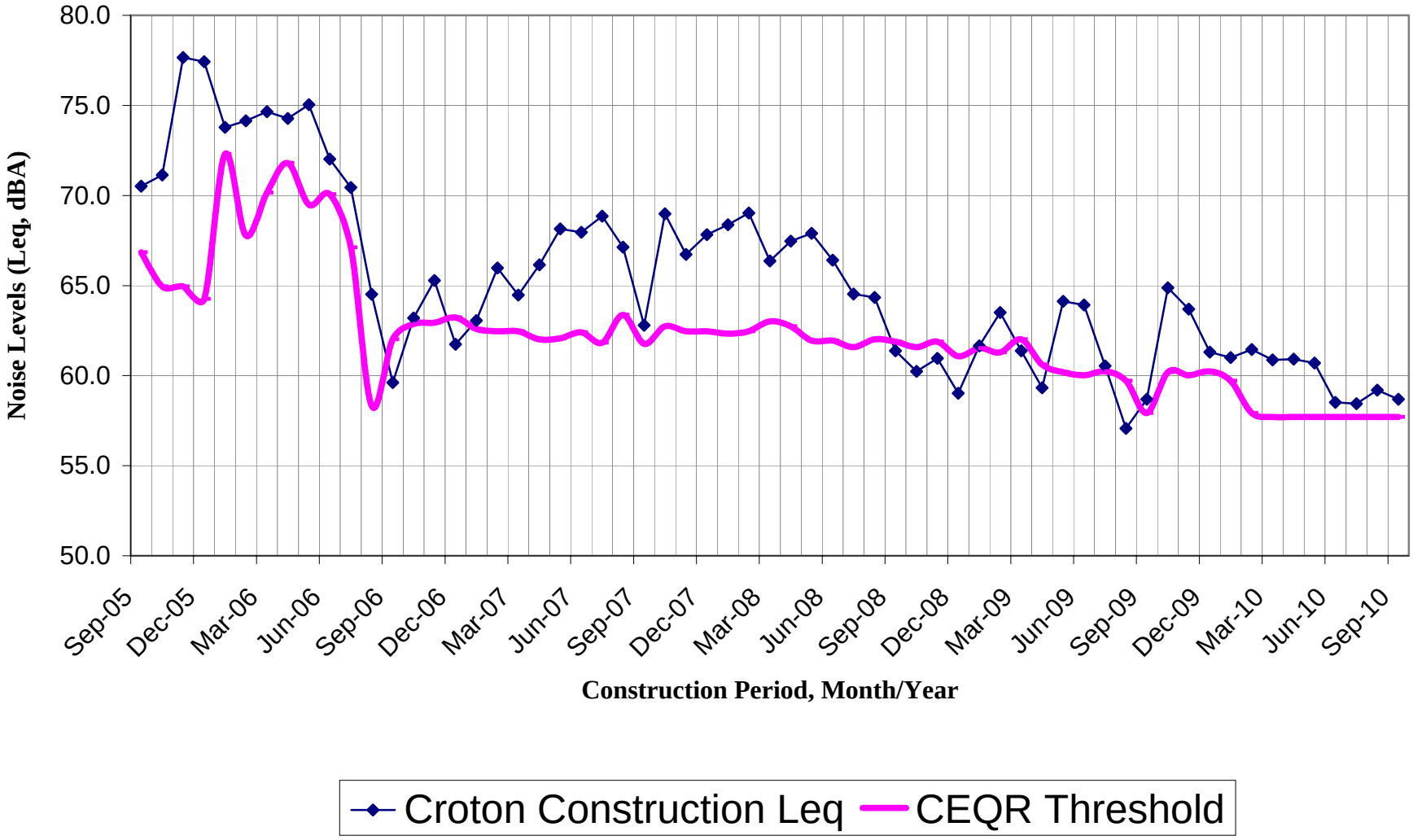


FIGURE 5.10-9. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT EV-S2 WITH UV FACILITY BASELINE (WITHOUT MITIGATION) (Leq, dBA)

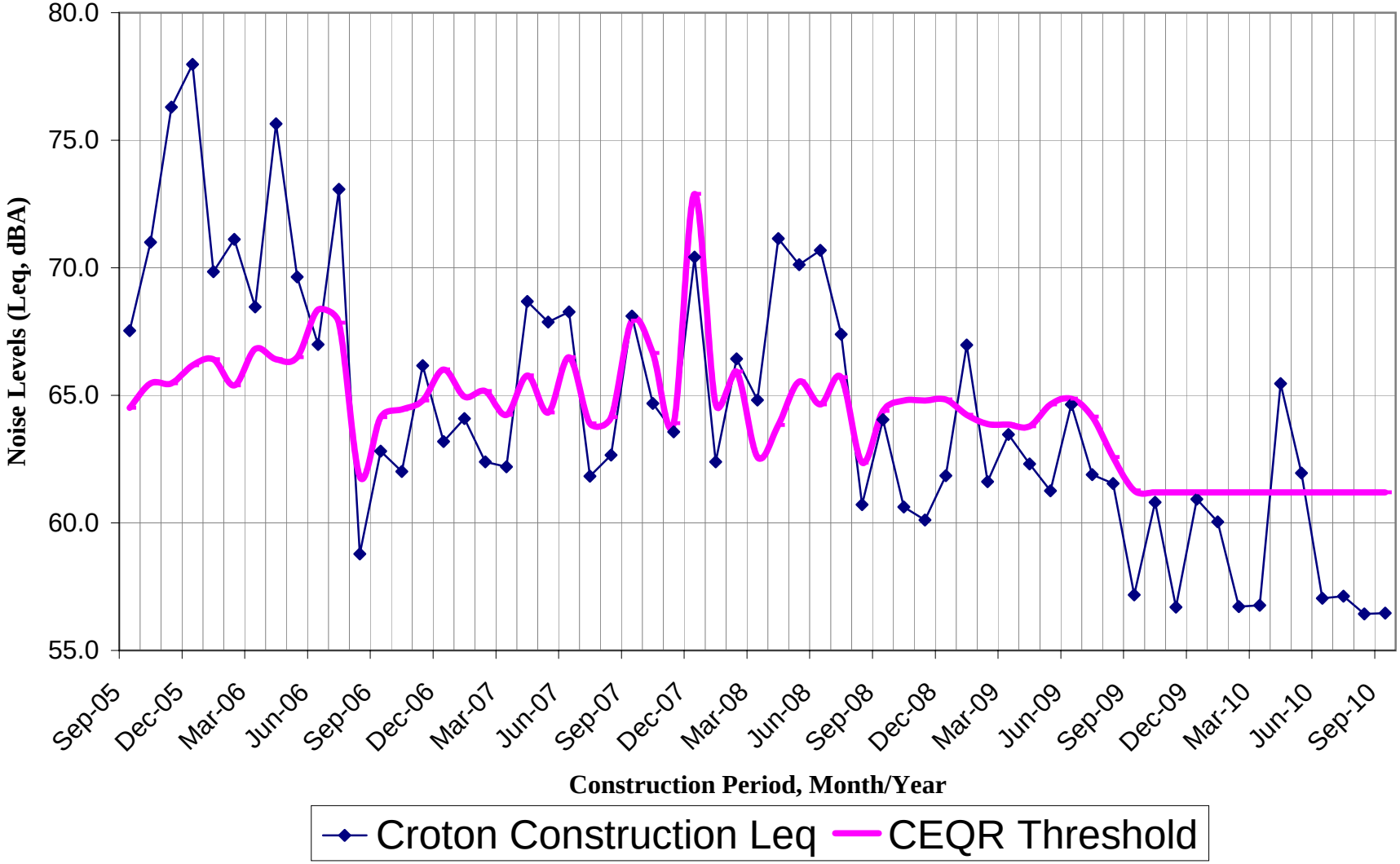


FIGURE 5.10-10. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT EV-S3 WITH UV FACILITY BASELINE (WITHOUT MITIGATION) (Leq, dBA)

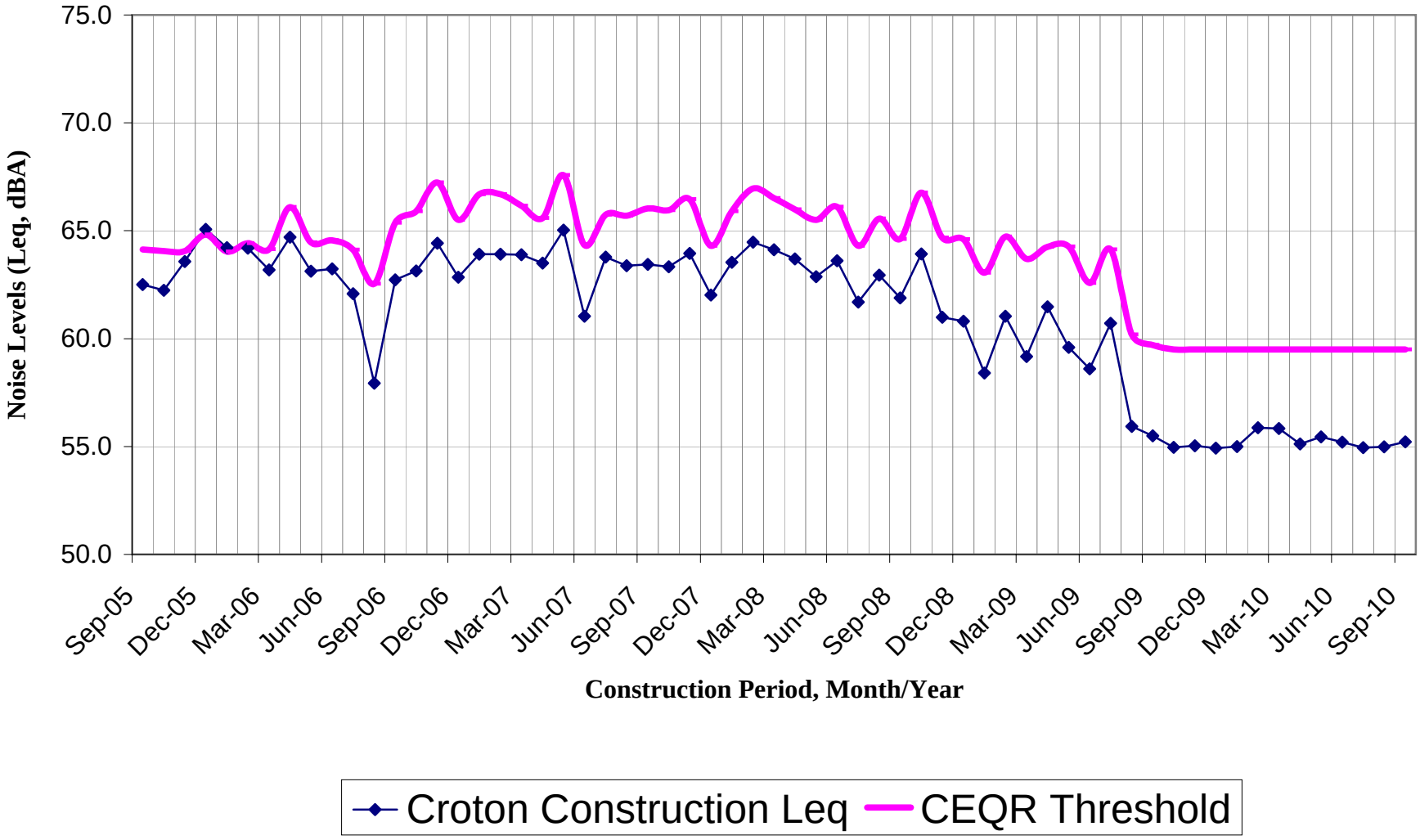
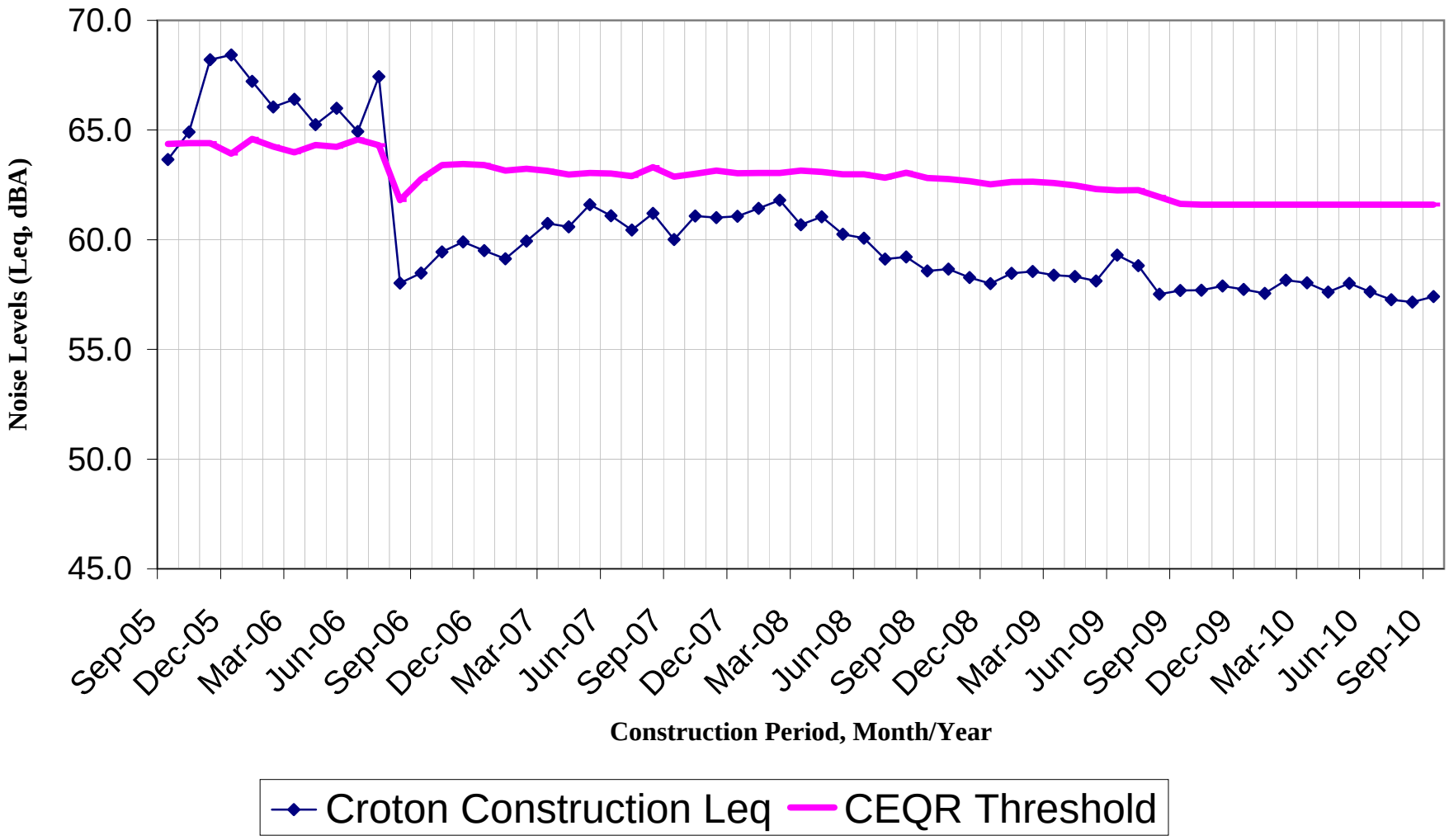


FIGURE 5.10-11. PREDICTED TOTAL MONTHLY CONSTRUCTION NOISE LEVELS AT EV-S4 WITH UV FACILITY BASELINE (WITHOUT MITIGATION) (Leq, dBA)



Medical Laboratory (EV-S1). Noise levels predicted to occur as a result of the proposed project would exceed the 3-5 dBA threshold used to define significance at the medical laboratory. The largest incremental change at this receptor (located immediately to the north of the proposed site) over the Future Without the Project level (with the Cat/Del Facility) would be 5.8 dBA over the CEQR threshold. Predicted noise levels would exceed the acceptable threshold for the majority of construction activities at this receptor. The period with the greatest incremental change would be from September 2005 until May 2006. This period corresponds to rock drilling and excavation activities on the site. The remainder of the construction period would also produce noise levels exceeding the 3-5 dBA threshold. The incremental change for this remaining period would fluctuate between approximately 1 dBA and 7 dBA above the threshold used to define significance. While this construction-related noise level increase would be considered an adverse impact, the laboratory is not considered a sensitive receptor, in accordance with CEQR guidelines, since the facility is not ordinarily utilized by the general public and is not one of the following uses that are categorized by CEQR as sensitive receptors: residences, health care facilities, school, libraries, and parks. It should also be noted that the users of the laboratory would be within the facility, which is fully enclosed with single-glazed windows that typically provide at least 20dBA attenuation from outdoor noise levels. Therefore, it is anticipated that the noise levels actually experienced by users of the laboratory would be within acceptable levels within the structure.

An analysis was performed to determine the total distance beyond the laboratory (and further to the north) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that these unacceptable noise level increases would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend from the north end of the site to a maximum distance of approximately 475 feet to the north of the laboratory. This area to the north is the Grasslands Reservation (see Figure 5.10-12). Section 9.1.4 discusses attentuation strategies.

Westchester County Penitentiary (EV-S2). Noise levels predicted to occur as a result of the proposed project at the penitentiary would exceed the 3-5 dBA threshold used to define significance. The largest incremental change at this receptor (located to the east of the Delaware Aqueduct Shaft No. 19) over the Future Without the Project level (with the Cat/Del UV Facility) would be 9.6 dBA above the CEQR threshold. Predicted noise levels at this receptor would exceed the acceptable threshold intermittently throughout the construction period. The period with the greatest incremental change is from September 2005 until May 2006. This period corresponds to rock drilling and excavation activities on the construction site. The remainder of the construction period would also produce noise levels that sporadically exceed the 3-5 dBA threshold. The incremental change for this remaining period would fluctuate between approximately 1 dBA and 7 dBA above the threshold used to define significance. Due to the relatively short duration of the predicted noise impact, it would be considered temporary and not significant. In addition, the penitentiary is fully enclosed with single-glazed windows that typically provide at least 20 dBA of attenuation from outdoor to indoor areas. This level of noise reduction would prevent unacceptable noise within the structure.

An analysis was performed to determine the total distance beyond the penitentiary (and further to the east) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that these noise levels would extend and to what extent local

noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend from the east end of the site to a maximum distance of approximately 425 feet to the east of the penitentiary for a period from approximately September 2005 until May 2006. Noise levels may exceed the acceptable limit sporadically at other times during construction. These periods, however, would not last more than a month or two. The potentially affected area to the east is still within the grounds of the penitentiary. No significant adverse impacts are predicted as a result of the temporary nature of the construction activities (see Figure 5.10-12). Section 9.1.4 discusses attenuation strategies that could be implemented as necessary.

Hammond House (EV-S3). Noise levels predicted to occur as a result of the proposed project at Hammond House would not exceed the 3 - 5 dBA threshold used to define significance.

An analysis was performed to determine the total distance beyond Hammond House (and further to the south) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that the noise levels would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would not extend beyond Hammond House (see Figure 5.10-12).

Juvenile Detention Center (EV-S4). Noise levels predicted to occur as a result of the proposed project at the juvenile detention center would exceed the 3 - 5 dBA threshold used to define significance. The largest incremental change at this receptor (located to the south of the proposed site) over the Future Without the Project level would be 4.2 dBA. Predicted noise levels would exceed the acceptable threshold from approximately October 2005 until July 2006. However, due to the short duration of these construction-related noise level increases, these noise level increases would be considered temporary and not significant.

An analysis was performed to determine the total distance (beyond the detention center and further to the north) that noise levels exceeding the 3-5 dBA threshold would extend. This was performed to determine the distance that the increased noise levels would extend and to what extent local noise-sensitive receptors would be affected. Noise levels that exceed the 3-5 dBA threshold would extend to a maximum distance of approximately 800 feet to the north of the juvenile detention center. This area to the north is the Grasslands Reservation, which includes the Westchester Medical Center (see Figure 5.10-12).

Facilities such as residences, health care facilities, schools, libraries, and parks are considered sensitive noise receptors. If noise reduction measures were not implemented as part of the project, sensitive receptors within the area of noise levels that exceed the 3-5 dBA threshold could be exposed to these noise level increases as a result of construction-related noise. Receptor EV-S1 would potentially be exposed for the duration of construction activities. The remaining three receptors would be exposed to these elevated levels to varying degrees from approximately September 2005 until July 2006. However, due to the short duration of these construction-related noise levels, they would be considered temporary and not significant. Table 5.10-29 presents maximum construction noise level data for the peak construction-noise year (2005).

TABLE 5.10-29. MAXIMUM NOISE LEVELS FROM CONSTRUCTION ACTIVITIES (WITH CAT/DEL) AT RECEPTORS NEAR EASTVIEW SITE WITHOUT ATTENUATION (Leq, dBA) (2005 ANALYSIS YEAR)

Monitoring Location	Monitoring Period	Future Without Noise Project Level (with Cat/Del UV Facility)[1]	Predicted Croton Construction Noise Level[2]	Total Noise Level During Construction[3]	Incremental Change[4]	CEQR Threshold[5]	Reduction Required to Reach Goal[6]	Exceed CEQR Threshold? (Y/N)
EV-S1	Quietest (2-3 pm)	69.4	77.5	78.1	8.7	72.3	5.8	Y
	Noisiest (1-2 pm)	69.6	77.5	78.2	8.6	72.5	5.7	Y
EV-S2	Quietest (2-3 pm)	65.5	77.8	78.0	12.5	68.4	9.6	Y
	Noisiest (1-2 pm)	65.5	77.8	78.0	12.5	68.4	9.6	Y
EV-S3	Quietest (2-3 pm)	64.4	62.2	66.4	2.0	67.3	0.0	N
	Noisiest (1-2 pm)	64.6	62.2	66.6	2.0	67.5	0.0	N
EV-S4	Quietest (2-3 pm)	61.7	67.9	68.8	7.1	64.6	4.2	Y
	Noisiest (1-2 pm)	62.4	67.9	69.0	6.6	65.3	3.7	Y

[1]Future Without Project (with Cat/Del) Noise = logarithmic addition of measured existing and Cat/Del construction noise (see Section 5.10.2.2.2)
[2]Predicted Construction Noise from on-site construction equipment as experienced at receptors.
[3]Total Noise Level During Construction = logarithmic addition of Future Without the Project (with Cat/Del) Noise Level plus Predicted Construction Noise Level
[4]Incremental Change = Total Noise Level minus the Future Without the Project Noise Level.
[5]CEQR Threshold: The maximum allowable noise level = Future Without the Project plus maximum allowable decibels according to CEQR 3-5 dBA rule:
<60 dBA, 5 dBA increase acceptable
60-61 dBA, >=4 dBA increase acceptable
>61 dBA, >=3 dBA increase unacceptable
[6]Reduction Required to Reach Goal: The reduction needed to bring Total Noise Level below the CEQR threshold.

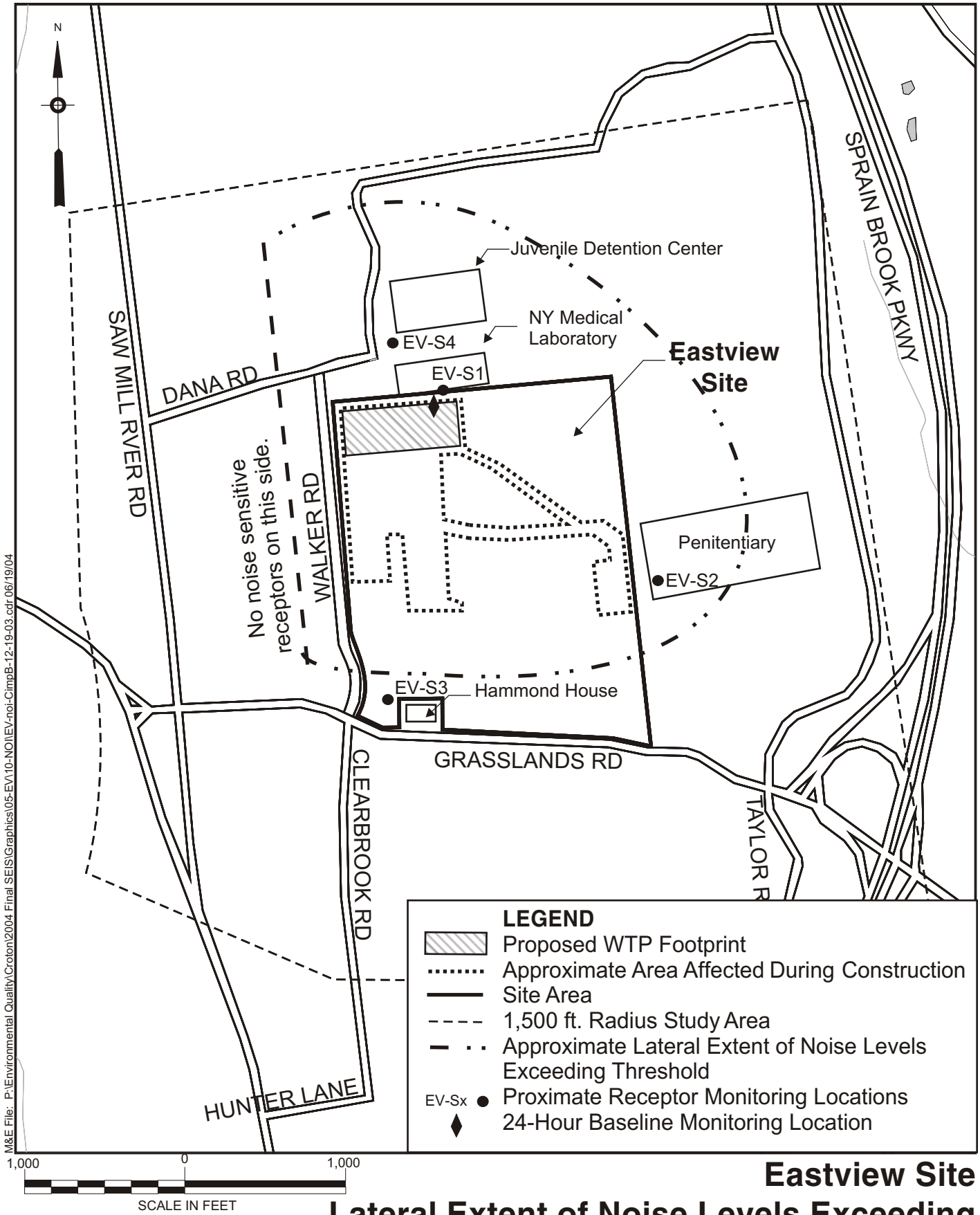
The Mount Pleasant noise ordinance states that construction-generated noise in an area zoned for residential uses may not exceed an L_{10} of 70 dBA between the hours of 8:00 AM and 6:00 PM when measured at 400 feet from the construction limit. A more prohibitive L_{10} limit of 55 dBA applies from 6:00 PM to 8:00 AM. Because the Town of Mount Pleasant noise code uses L_{10} values, a comparison of Leq and L_{10} values was performed.

Table 5.10-30 presents a comparison of predicted construction noise levels (L_{10}) at 400 feet from the construction limit to noise limits as prescribed by the Town of Mount Pleasant Noise Code. In the absence of attenuation measures, predicted noise levels would violate the Mount Pleasant Noise Code, particularly for the hours between 7:00 AM and 8:00 AM when the reduced noise limits applies. As opposed to the noise limits prescribed in the *CEQR Technical Manual*, Mount Pleasant's noise limits are absolute limits over which noise may not occur. Construction specifications would include a requirement that the construction manager employ whatever noise controls necessary to comply with the ordinance.

The Mount Pleasant Noise Code can be effectively complied with through the use of noise attenuation measures. Measures that could be utilized include stationary and portable barriers, advanced equipment mufflers, or staggering usage of equipment. Relevant guidelines and noise limits of the code will be in the detailed specifications to which the contractor will be obligated to comply. The precise attenuation methods employed by the contractor to adhere to acceptable levels would be left to their discretion (subject to NYCDEP review and approval). Section 9.1.4 discusses possible attenuation strategies.

TABLE 5.10-30. MAXIMUM NOISE LEVELS FROM CONSTRUCTION ACTIVITIES WITH CAT/DEL (2005) AT 400 FEET FROM EASTVIEW SITE WITHOUT ATTENUATION COMPARED TO MOUNT PLEASANT CODE (L10, DBA)

Construction Limit	Monitoring Period	Total Noise Level During Construction[2]	Mount Pleasant Code[3]	Code Compliance? (Y/N)
North	Noisiest (1-2 pm)	74.2	70	N
	7-8 am	74.6	55	N
South[4]	Noisiest (1-2 pm)	69.0	70	Y
	7-8 am	69.0	55	N
East	Noisiest (1-2 pm)	69.8	70	Y
	7-8 am	69.5	55	N
West	Noisiest (1-2 pm)	73.5	70	N
	7-8 am	73.8	55	N



Eastview Site
Lateral Extent of Noise Levels Exceeding Threshold (With Cat/Del - Before Mitigation)

Croton Water Treatment Plant

Figure 5.10-12

Combined Mobile and Stationary Source Noise. The medical laboratory, (EV-S1), the juvenile detention center (EV-S3), and Hammond House (EV-S4) each could be exposed to the combined effect of both mobile and stationary noise generated by construction activities at the proposed water treatment plant site. The greatest incremental change from mobile sources is predicted to occur in 2006 and the greatest incremental change from stationary sources is predicted to occur in 2005. Although these years are different, the two peak years were combined in order to predict the worst-case scenario. This is the most conservative approach and could over-estimate combined noise levels. Based on the PCE screens presented in Tables 5.10-4 through 5.10-7, the potential incremental change in mobile source noise levels due to construction activities for the route segments along which these sensitive receptors are located is less than half a decibel. Receptors at this site already would have noise level increases in excess of the CEQR impact threshold used to determine significance due to contributions from stationary source noise. The contribution from mobile sources to the total noise would not appreciably change predicted noise levels. Section 9.0, Mitigation of Potential Impacts, presents possible mitigation measures that could be implemented should they be necessary.

5.10.3.2.4. Vibration from Construction

See Section 5.10.3.2.2 for a discussion of vibration during construction that considers rock blasting, fly rock control, ground vibration, air blast, dust, and potential impacts from tunnel boring machines.

This analysis concludes that there are significant impacts from noise but not significant impacts from blasting at the Mosholu Site. The Eastview Site would have adverse impacts, and the Harlem River Site would have no significant impacts.